



**STATE OF NEVADA PETROLEUM FUND  
CEM COST GUIDELINES**

***DECEMBER, 2001***

## SECTION 1 Project Background/Data Assimilation/Use of Data

### Introduction

As administrators of the State of Nevada Petroleum Fund (the Fund), the State of Nevada - Division of Environmental Protection (NDEP) has prepared this document to facilitate the review of Not-to-Exceed Cost Proposals (NTEPs) submitted by petroleum storage tank owners and/or Nevada Certified Environmental Managers (CEMs).

### Objectives

The objectives of this document are:

- Produce a guideline document that provides a mechanism whereby the NTEP review process is uniform, sufficiently flexible to account for differing site/contaminant conditions, and does not restrict competition among CEMs.
- Develop guidelines that do not discourage consideration and implementation of innovative assessment or remedial technologies.

### Background

The Fund was initially implemented in 1989 by state legislation to assist owners and operators of regulated underground petroleum storage tanks to meet federal requirements for financial responsibility pursuant to 40 CFR 280.90, through 280.99. The Fund provides reimbursement to qualified storage tank owners/operators for assessment/remediation costs (exceeding set deductible and co-payment amounts) associated with **accidental** petroleum releases. The Fund also allows voluntary enrollment of non-regulated petroleum tanks (i.e. above-ground tanks less than 30,000-gallons and farm/residential tanks), and automatically covers releases from heating oil tanks used for onsite consumption. All payments from the Fund must be approved by the State Board to Review Claims (the Board).

The fund is presently supported by a \$.0075 fee per gallon on petroleum products and a yearly \$100.00 tank enrollment fee.

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Subsequent to implementation of the Fund, NDEP undertook means to manage assessment/remediation costs associated with leaking petroleum storage tank sites. One of several forms of cost management implemented included the requirement of the submission of NTEPs by storage tank owners (normally prepared by CEMs) prior to the commencement of assessment/remediation activities. The NTEP system, implemented in June, 1994, was designed to manage reimbursable CEM costs as opposed to establishing specific costs or restricting professional fees.

This document has been produced to facilitate the fair, consistent and efficient review of NTEPs. The document is based upon data assimilated from approved NTEPs and published cost guideline documents utilized in several other states.

### Organization of Document

This document has been formatted into three sections and six appendices as follows:

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### **Data Assimilation**

In preparation of this document, NTEPs which have been reviewed and approved by NDEP to date were evaluated and compiled into spreadsheets. Information evaluated from approved NTEPs included the following:

- Tasks necessary to perform complete assessment/remediation activities
- Professional time to perform proposed tasks
- Types of investigative tools utilized
- Distance of sites from CEM's office location
- Geologic/hydrogeologic conditions
- Types of contaminants
- Regulatory Agency requirements

### **Data Evaluation/Presentation**

Following data tabulation as described in the previous section, professional hours typically accrued for each task were calculated. Tables summarizing individual tasks are presented in Section 3.

In general, "typical" professional hours were determined by eliminating the highest and lowest hourly values, adding the remaining hours for each professional category and dividing by the number of entries. Cost guidelines utilized in several other states were also referenced to evaluate and support data assimilated from the state of Nevada NTEPs.

It should be noted that only "typical" professional hours were determined. Additionally, CEM reimbursable in-house expenses such as field and health & safety equipment, per-diem, etc., were not included in the review process. CEM in-house equipment costs, vehicle mileage charges, CEM markup on outside vendor and contractor costs, and per-diem fees, therefore, are not included in the following cost summaries. Proposed costs for these services should be requested in each NTEP, above and beyond CEM labor fees. CEMs may request 15% markup of subcontracted costs totaling less than \$3,000.00 for like and kind services. Refer to Appendix F for details regarding CEM markup. Refer to Appendices A and B for allowable CEM equipment and travel costs.

A table summarizing the typical number of CEM hours for each individual task is not appropriate. Unit costs and justified time and materials charges have been utilized for some tasks that are associated with site specific field conditions (subsurface exploration, monthly remediation system maintenance, etc.).

### Use of Tables

1. It is important to note that this is not a corrective actions guidance document. Appropriate assessment and remediation activities must be conducted at sites pursuant to the request/authorization of the implementing agency case officer. This document does not limit the activities a CEM may or may not perform. Additionally, a CEM is not automatically "entitled" to proposed levels of effort and associated costs presented in the following tables. The tables present "typical" levels of effort as a guidance to preparing NTEPs. If a CEM can perform a task in less time than summarized in the appropriate table, the reduced level of effort must be proposed. If a CEM anticipates additional time is necessary to complete a task as summarized in this document, it should be proposed as such, providing complete justification for the extra efforts. NTEP review personnel reserves the right to modify proposed levels of effort based on knowledge of the activities which have been requested or authorized by the regulatory case officer. If a CEM is proposing levels of effort for a task which is not tabulated in this document, it should be proposed as "Task N/A", named appropriately, and provide complete details of the activity and justification for the proposed efforts.
2. NDEP Fund staff will not proceed with NTEP review until work scope approval has been acquired from the appropriate implementing regulatory agency. The Carson City and Las Vegas NDEP offices provide regulatory oversight for all Nevada leaking petroleum storage tank projects occurring outside Washoe County. The Washoe County District Health Department provides regulatory oversight for remediation sites associated with regulated petroleum tanks in Washoe County. The Clark County Health District's involvement in projects in Clark County is limited to oversight of contaminated soil excavation that is performed concurrent with petroleum underground storage tank (UST) removal activities. Some leaking petroleum tank projects occurring in Washoe County may be referred to either the Carson City or Las Vegas NDEP offices.

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3. This document was intended to be as complete as possible in terms of services performed by CEMs to date at Fund sites. Correspondingly, 42 assessment and remediation tasks are presented to assist in NTEP preparation and review. Most of the tasks are presented in cost guideline tables.
4. Each of the cost guideline tables have been categorized consistent with 40 CFR parts 280.60 to 280.69. Activities generally included in each task include:
  - Initial Abatement Measures: If there is an imminent danger to human health and the environment, initial abatement measures are required to remove the danger. Product must be removed from the tank system as soon as possible to prevent further release and product migration to soil or groundwater. Monitoring for fire and safety hazards posed by vapors or free product that may have migrated from the leaking petroleum tank must be performed. Hazards posed by excavated soil must be eliminated. Reimbursement will be recommended if appropriate initial abatement procedures are executed pursuant to 40 CFR 280.62.
  - Initial Site Characterization: Information regarding the site and the nature of the release should be recorded while performing initial abatement procedures. Pursuant to 40 CFR 280.63, data regarding the following must be supplied to the implementing regulatory agency:
    - Site name and location
    - Name of the party responsible to assess and remediate the release (owner)
    - Name of contact at the site if different than the owner
    - The nature & the horizontal/vertical extent of the release
    - The estimated quantity of the release
    - Surrounding populations
    - Water quality
    - Well locations

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- Subsurface soil conditions
- Climate conditions
- Land use

If conducted appropriately, costs associated with these activities will be recommended for reimbursement.

- Detailed Site Characterization: The extent and location of soils contaminated by the release, and the presence and concentrations of dissolved product contamination in the groundwater must be defined. An investigation of the release, release site, and surrounding area possibly affected by the release must be performed. If conducted appropriately, costs associated with these activities will be recommended for reimbursement.
  - Corrective Action Plan: A Corrective Action Plan (CAP) for remediating contaminated soils and groundwater must be designed and implemented. The CAP should be effective and cost efficient, and include detailed evaluation of at least three remediation alternatives. If conducted appropriately, costs associated with these activities will be recommended for reimbursement.
  - Monitoring & Maintenance: Tasks include all monthly or quarterly operations, monitoring and maintenance requirements for the remediation system. If conducted appropriately, costs associated with these tasks will be recommended for reimbursement.
  - Site Closure: Tasks include all activities associated with decommissioning of remediation system and efforts to restore site to original use. If conducted appropriately, costs associated with these tasks will be recommended for reimbursement.
5. For each task presented in an NTEP, NDEP will compare the proposed CEM levels of effort with guideline hours presented in this document. NDEP understands that in some circumstances, a task may not be completed in the typical number of hours indicated in the guideline tables.

If a CEM anticipates additional hours will be required to complete a particular task, complete justification must be

provided in the NTEP. Fund staff will concur only if appropriate justification is provided.

If it is discovered during the course of a task that additional time will be required for its completion, the CEM may submit a Change Order. Fund staff will concur only if **complete** justification is provided.

If additional time is necessary to complete field activities, the CEM must use his/her judgement to complete the task as expeditiously and cost effectively as possible. A CEM may contact the regulatory case officer directly from the site during field activities to discuss additional work scope. A verbal request must be followed with a Change Order (including an NTEP) summarizing the additional work scope and costs. The Change Order must clearly identify the NTEP it is associated with. **Change Orders must be submitted to Fund staff no more than 30 days following task completion. Appropriate additional field activities must not be delayed by a CEM waiting for work scope/cost concurrence. Additional project costs associated with unnecessary de-mobilization and re-mobilization activities may not be recommended for reimbursement.**

Justifiable conditions facilitating a Fund Change Order include, but are not limited to:

- Drilling conditions of extreme difficulty.
- Travel outside the CEM's metropolitan area, pursuant to the policies presented in Appendix B.
- Time spent developing or purging wells with extremely slow recharge rates.
- Necessity of additional field exploration activities to characterize a site.
- Necessity of additional pilot testing time.
- Evaluation/implementation of innovative assessment and remediation technologies.
- Additional time for the design, installation and/or maintenance of a complex remediation system.

Conversely, if a CEM is capable of performing a particular task in less time than the guidelines indicate (due to



site/project specific circumstances such as the performance of a limited subsurface investigation that can be completed in one day, etc.), it will be appropriate to propose less hours than summarized in this document. NDEP requires the CEM to propose the appropriate level of effort for any given task summarized in an NTEP, even if it differs from the hours proposed in the appropriate guidelines task.

Some projects may necessitate somewhat specialized tasks that are not presented in the guidelines. In this case, the CEM should not try to "squeeze" the task into a guidelines task that appears similar. The proposed activities must be presented on an NTEP Task Submittal Form (see Appendix D), identifying it as task "N/A" and given an appropriate name. The levels of effort, in-house equipment, mileage, etc. must be presented as the CEM feels are appropriate. The CEM must provide a discussion of the task and his reasoning regarding the proposed hours/costs.

6. If a task proposes activities that will occur during a specific time interval, the start and stop dates must be specified. For example: One year operations & monitoring (January 1, 2001 through December 31, 2001); Two quarters groundwater monitoring and reporting (2nd and 3rd quarters of 2001); etc.
7. If, during the course of activities associated with an approved NTEP, the work scope changes, the CEM must notify NDEP and submit a modified NTEP or a change order. For example: The number of wells which are to be sampled during a time period changes; A treatment system is taken off line or breaks down for an extended time period; etc.
8. Some tasks do not facilitate a CEM hourly evaluation. Unit costs regarding CEM drilling and well construction oversight (cost per foot) have been developed. Time and materials procedures have been applied to some tasks, either in part or in their entirety. Please note that on some time and materials tasks, appropriate back-up detailing CEM activities and accrued costs must accompany each claim.
9. The guideline tables have been formatted into assessment/remediation tasks that may not concur with some CEM workplan or billing invoice formats. For example, the guidelines include site safety plan preparation and utility clearance as one task. Because these tasks are performed independently of each other, a CEM may break them into

separate tasks on a workplan or client invoice sheet. **Tasks included in NTEPs must be formatted pursuant to guideline tables to facilitate review by Fund staff. NTEPs must be submitted on the forms (or representative reproductions) provided in Appendix D.**

Please note that during claim review, each Invoice Itemization sheet must reference **one** approved NTEP, not specific tasks in this document.

10. A significant amount of CEM time is spent on the detailed site characterization phase of leaking storage tank projects. To streamline this phase of work, NDEP recommends that CEMs produce only **one Detailed Site Characterization report**. Fund staff **will not** recommend for reimbursement the preparation of interim site characterization reports that do not fully delineate contaminant plumes unless such reports are requested by the implementing regulatory agency.

If, during the course of the detailed site characterization study, a determination is made that additional investigation is necessary to characterize the site, the CEM should submit a one to two page letter or facsimile request to the regulatory case officer. The request should detail the need for additional field activities (i.e. groundwater monitoring wells, soil borings, etc). A CEM may also contact the regulatory case officer directly from the site during field activities to request verbal authorization to perform additional work in order to save costs associated with equipment/personnel de-mobilization and re-mobilization. A verbal request must also be followed with a letter summarizing the request and subsequent regulatory authorization. **With concurrence from the implementing regulatory agency, the CEM should proceed to perform the additional work with no interim report preparation (unless requested by the regulatory case officer).** The results of the entire site characterization study, with full contaminant plume delineation (soil and groundwater), should then be submitted in the final Detailed Site Characterization report.

11. There is no guideline table summarizing emergency/initial abatement activities. These activities occur pursuant to regulatory agency verbal authorization and prior to Fund case establishment. Emergency/initial abatement includes activities designed to alleviate situations that are immediately dangerous to life or health, as concurred with by the implementing regulatory agency. Such activities may

only be necessary immediately following release discovery, and do not persist throughout project duration. Costs associated with these activities will be evaluated on an individual basis by Fund staff. A guideline table summarizing these types of activities, therefore, is not appropriate for this document.

12. This is an evolving document. NDEP will strive to keep all technical aspects of this document up-to-date. Comments, questions and suggestions from the CEM and regulated communities will be welcomed and evaluated by NDEP throughout this documents implementation. Comments regarding this document may be presented during the public forum portion of Board meetings. Comments must be summarized in writing and submitted to Fund staff. Fund staff will propose subsequent changes to this document to the Board when appropriate.

New site assessment/remediation technologies are constantly emerging. As new technologies are accepted by CEMs and NDEP, new tasks will be evaluated and added into this document.

13. As mentioned previously, the hourly tables in this document were formulated utilizing data evaluation of "typical" CEM hours on previously-approved NTEPs, and review of other state's cost guideline documents. Typical CEM skill level utilization for each task was also evaluated, and is represented in each table. **It is important to keep in mind that the tables represent a general guideline for CEMs to complete a task within typical parameters. It is not the intention of NDEP to dictate to CEMs exactly which skill levels and associated hours will be allowed on each task. CEMs are urged to convert hourly tables to costs by applying their own skill level rates to tabulated hours. The resultant potentially reimbursable costs can be invoiced by using any type of skill level deemed appropriate by the CEM.**
14. NDEP staff must ensure that costs claimed for reimbursement are associated with work scopes that have been authorized by the respective regulating agency. **Copies of appropriate regulatory agency authorization letters, therefore, must be submitted with each claim.**

#### Coverage Application/Claim Filing Procedures

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1. The leaking petroleum tank system owner/operator (claimant) or appropriate personnel must report the petroleum discharge to NDEP at ~~(775) 687-4670~~. [888-331-6337](tel:888-331-6337)
2. If the regulatory agency requires assessment and/or remediation, and costs exceed \$250.00 for each leaking heating oil tank less than 1,100-gallons in capacity, or \$5,000.00 for all other types of leaking tank systems, the claimant may request a "State of Nevada Underground Storage Tank Release & Reimbursement Packet" from the NDEP Petroleum Fund Branch at (775) 687-4670 extension 3155.
3. The claimant or appropriate personnel must mitigate emergencies associated with the release to prevent the rapid migration of petroleum into the environment and eliminate potential or existing hazards such as fire, explosion, and vapor.
4. The claimant must provide NDEP a completed Petroleum Fund Coverage Application form.
5. NDEP will assign a case number and evaluate the coverage application and other available records (Fund enrollment, status of UST and corrective action compliance, etc.), and respond in writing to the claimant. **If it is determined that the facility was not in compliance with UST and/or corrective action regulations at the time of leak discovery, NDEP may recommend a reduction in reimbursement.**
6. In order for the project to qualify for reimbursement, assessment/remediation costs must total at least \$5,000.00 for each leaking petroleum tank system, or \$250.00 for heating oil tanks not exceeding 1,100-gallons. A CEM must be employed if the claimant chooses to hire an outside contractor to perform assessment/remediation activities.

**Fund staff will not recommend for reimbursement costs associated with change of CEMs during the course of the project.**

7. The claimant, with the assistance of his CEM, must submit a workplan (with the associated NTEP) to the implementing regulatory agency for each assessment/remediation phase to be performed. The phases (which may be modified to suit

individual site parameters) to be considered are:

- Emergency/Initial Abatement (no workplan necessary)
- Initial Site Characterization
- Detailed Site Characterization
- Corrective Action Plan - Design & Implementation
- Operation & Maintenance
- Verification Monitoring
- Site Closure

8. The CEM may elect to submit an NTEP to the implementing regulatory agency after the workplan has been accepted by the case officer. The NTEP must include tasks for each assessment/remediation phase approved in the workplan. It is not necessary to submit an NTEP for work associated with emergency/initial abatement if the task has been authorized by the implementing regulatory agency. In order to facilitate timely processing, the NTEP must be submitted to NDEP before the associated work has begun, or immediately following implementation of the workplan activities. If an NTEP is submitted weeks or months following implementation of associated activities, the proposal must take the form of an "after the fact" NTEP. In this case, accrued levels of effort and associated costs must be presented on Task Submittal Forms.
9. Each NTEP shall include all proposed CEM costs necessary to complete the assessment/remediation phase. This includes all professional staff time, support staff time, management of outside contractors, overhead for all applicable outside services (contractors, laboratory analyses, supplies/equipment, etc.), in-house equipment/materials usage (field instruments, bailers, etc.), staff travel expenses, and any other expenses to be incurred by the CEM. Each NTEP must be itemized to clearly identify individual CEM staff hours, total project hours, and provide justification for the total NTEP cost. Because Work Proposals commonly include proposed costs, the NTEP must be included as part of the proposal.
10. **NTEPs must be submitted on the forms (or appropriate**

reproductions) supplied in Appendix D. NTEPs not prepared on the forms (or appropriately formatted pursuant to the forms) will be returned to the claimant prior to review. If an NTEP task does not fit within a Cost Guideline document task parameter, complete, written justification for proposed costs must be provided.

NTEPs must appear in each Work Proposal or Change Order submitted to the regulatory case officer. If the regulatory case officer will not be performing NTEP review (e.g. Washoe County District Health Department personnel, a copy of the Work Proposal or Change Order must be forwarded to NDEP.

11. **Each NTEP must be signed by the claimant on the Not To Exceed Proposal Cover Sheet. The following clause must appear above the claimant's signature:**

- "I have reviewed and understand the proposed costs summarized in this proposal. I understand that I am responsible for any proposed costs not recommended for reimbursement by the State of Nevada Petroleum Fund staff, and which I have agreed with the CEM are appropriate to incur, and/or have directed to incur such costs on the subject project."

**Any NTEP submitted without the claimant's signature and the above clause will be returned prior to review.**

12. Upon the claimant's concurrence, the NTEP is forwarded to NDEP for review. NTEPs associated with projects occurring in Clark County should be forwarded directly to the case officer, with a copy sent to the Carson City NDEP Fund office. NTEPs associated with projects being conducted outside Clark County should be forwarded to the Carson City NDEP Fund office. NDEP will notify the claimant and CEM of its concurrence to the NTEP in writing.

During claim review, NDEP will recommend reimbursement for all CEM invoices that are directly associated with the total NTEP and do not exceed more than five percent or \$3,000.00 (whichever is less) of the concurred amount. NDEP may, however, deny requested CEM costs at the time of claim review if conflicts between the NTEP and claim arise. Any discrepancy between NDEP's concurred amount and the amount requested may be justified to NDEP in writing. Further justification may be submitted to the Board should

resolution to any discrepancy not be achieved with NDEP.

13. Change Orders to the NTEP will be reviewed on a case-by-case basis. Requests for Change Orders must include a description, justification, and amount of the Change Order. Reasons for allowing Change Orders include, but are not limited to:
  - Additional field activities pursuant to unanticipated subsurface site conditions.
  - Unanticipated time developing and/or purging wells due to excessively slow aquifer recharge rates.
  - Changes required by the regulatory oversight agency.
  - Remediation design changes necessitated by unforeseen site conditions.
14. **NDEP concurrence of an NTEP based on guidelines summarized in the State of Nevada Petroleum Fund CEM Cost Guidelines document does not guarantee reimbursement in full. All final reimbursement decisions are pending subsequent approval from the State Board to Review Claims.**
15. The CEM prepares the claim for the claimant. Each claim submittal must include the following:
  - The Reimbursement Request Submittal Checklist
  - The Invoice Itemization sheets
  - The Equipment Accountability sheet
  - The Price Quote List (utilized for bid procurement, if appropriate)
  - Copies of written bids (if necessary)
  - Invoice Breakdown sheet(s) (if a single non-CEM invoice is to be appropriated to multiple projects)
  - Copies of CEM in-house equipment/materials usage logs
  - Copies of CEM vehicle mileage logs
  - Copies of all original invoices or receipts greater than \$10.00 being requested for reimbursement
  - Copies of regulatory concurrence letters authorizing the work associated with the claim. Copies of NTEP concurrence letters are acceptable if the regulatory case officer performed NTEP review.

**Copies of receipts for single outside materials/supplies items costing less than \$10.00 each will not be necessary.**

**These types of purchases, however, must be itemized on a CEM field log or equivalent document.**

16. The Invoice Itemization sheets must cross reference the respective NTEP. The NTEP date, or a CEM-assigned tracking number may be used for tracking purposes. An Invoice Itemization sheet packet may refer to one NTEP only.
17. Please note that there are two Invoice Itemization sheets: one to detail CEM costs, and one for non-CEM costs. It is important to list CEM and non-CEM costs on the appropriate Invoice Itemization sheet, even if these costs are combined on the actual billing invoice.
18. Pieces of equipment purchased for the project that exceed \$500.00 must be summarized on the Equipment Accountability sheet.
19. A minimum of three written bids must be evaluated by the CEM for any non-CEM services or equipment purchases that exceed \$3,000.00 (this does not include laboratory analytical costs). The bids must be summarized on the Price Quote List. Copies of the written bids must be supplied with the claim. A thorough justification for acceptance of any bid other than the lowest, or for receipt of less than three bids must be supplied.
20. The owner/operator requests NDEP submit the claim to the Board by submitting the above-referenced claim package. **Incomplete or inappropriately prepared claim packages will be returned unprocessed.**
21. Claims are reviewed on a first-come first-served basis. Claim submittals are logged in by NDEP pursuant to receipt date. There is a waiting period prior to claim review. Claimants, therefore, are urged to submit claim packages as expeditiously as possible following assessment/remediation phases.  
**An initial claim for a non-regulated heating oil tank (less than 1,100-gallons) may be submitted if reimbursable costs exceed \$250.00 per leaking tank system. An initial claim for all other types of petroleum tank systems may be submitted if reimbursable costs exceed \$5,000.00 per leaking tank system. Subsequent claims may be submitted once every three months if the total requested reimbursement amount is at least \$1,000.00. The last claim submittal of a project may be submitted regardless of the requested reimbursement**



**amount. The initial claim must be received by NDEP no later than 12 months following release discovery. The final claim must be received by NDEP no later than 12 months following the authorized termination of corrective action activities at the site.**

22. Following claim review, NDEP will notify the owner/operator and CEM of the proposed reimbursement recommendation.
23. The owner/operator or CEM may contact NDEP regarding any questions or discrepancies concerning the proposed reimbursement recommendation. If discrepancies cannot be remedied, the owner/operator may contest NDEP's decision at any scheduled Board meeting.
24. NDEP presents it's final reimbursement recommendation to the Board.

## SECTION 2

### Job Descriptions/Categories

Title	General Responsibilities	Suggested General Qualifications
Administrative Assistant or Secretary	Assists in report formatting, invoicing, State Fund submittals and project related office services.	NA
Draftsperson	Prepares routine project graphics with or without CADD including: site plans, cross sections, contour maps, and engineering design drawings.	<ul style="list-style-type: none"> <li>• Relevant experience in CADD or technical drawing</li> </ul>
Technician	Assists with monitoring or extraction well installation, performs sampling of monitoring wells, collects samples as stipulated by remedial permits, installs remedial systems in accordance with design plans and operates and maintains remedial equipment in accordance with O&M manual.	<ul style="list-style-type: none"> <li>• High School Diploma</li> <li>• Minimum of one to two years relevant training</li> <li>• Health &amp; safety training such as 40 Hour OSHA 1910</li> </ul>

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Title	General Responsibilities	Suggested General Qualifications
Staff Geologist or Staff Engineer	Collects and compiles field data. Logs soil borings and/or excavation activities. Summarizes findings in reports and/or on maps. May prepare preliminary data analyses and proposed course of action. Coordinates routine project tasks and supervises subcontractor activities. May also prepare State Fund submittal packages. May perform preliminary construction drawings and specifications for in-situ remedial system.	<ul style="list-style-type: none"> <li>• BS in Engineering or Geoscience discipline with a minimum of two years of applicable experience or MS in Engineering or Geoscience discipline with a minimum of one year of applicable experience.</li> <li>• Health &amp; safety training such as 40 Hour OSHA 1910</li> </ul>
Senior Geologist or Senior Engineer	Directs or conducts collection and analyses of data. Responsible for selected subcontractor's performance. Coordinates completion of individual field or office tasks within a project. Prepares remedial option analyses and preliminary selection and design. Coordinates and/or prepares project reports. Provides recommendations for remedial system design & enhancement based on data analyses.	<ul style="list-style-type: none"> <li>• BS in Engineering or Geoscience discipline with a minimum of three years of applicable experience or MS in Engineering or Geoscience with a minimum of two years of applicable experience.</li> <li>• Health &amp; safety training such as 40 Hour OSHA 1910</li> </ul>

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Title	General Responsibilities	Suggested General Qualifications
Project Manager	Manages assessment/remediation projects involving data collection, and analyses, and the formulation of conclusions and recommendations. Directly responsible for Client relations, project budget and schedule and subcontractors on individual projects. Ensures project/client goals are met. Independently evaluates data and selects course of action. May communicate with regulatory agencies on clients behalf.	<ul style="list-style-type: none"> <li>• Professional registration (i.e. CEM, PE)</li> <li>• BS in Engineering or Geoscience discipline with a minimum of five years of applicable experience or MS in Engineering or Geoscience discipline with a minimum of three years of experience.</li> </ul>
Senior Manager or Principal	Overall responsibility for all technical, regulatory and budgetary aspects of projects. Assigns project managers to individual projects. May directly manage special projects of major scope. On individual routine project basis oversees that appropriate technical and regulatory approaches are being followed by staff and client/project goals are met.	<ul style="list-style-type: none"> <li>• Professional registration (i.e. CEM, PE)</li> <li>• BS in Engineering or Geoscience discipline with a minimum of ten years of applicable experience or MS in Engineering or Geoscience discipline with a minimum of six years of applicable experience.</li> </ul>

### **SECTION 3: CEM Cost Guideline Tables**

#### **A. SITE CHARACTERIZATION**

**TASK A.1: A - K EVALUATION**

**Scope of Work:** This task consists of all personnel time to compile and submit NAC 459.9973 (a through k) information. This information is required to be submitted pursuant to discovery of the release. Information unknown at the time of the release (volume of contaminated soil, subsurface lithology, etc.) will be submitted in the subsequent Site Characterization Report.

SKILL LEVEL	DUTIES	TOTAL HRS
Principal	Senior review	1
Project Manager/ Senior Engineer/ Senior Geologist	Regulatory liaison, NAC 459.9973 (a - k) information compilation & submittal	2
Staff Engineer/ Staff Geologist	NAC 459.9973 (a - k) information compilation & submittal	8
Administration - Clerical	Administrative support	1
<b>TOTAL HOURS FOR TASK</b>		<b>12</b>

**Includes:**

- Administrative support
- Regulatory agency liaison
- Travel time to water resources agency for document review if located within metropolitan area of consultant
- Revision/addendums to submittal if lacking industry standard minimum requirements

**Excludes:**

- Travel time if water resources agency is located outside metropolitan area of consultant
- Revisions/addendum to submittal if requested by regulatory agencies due to conditions unknown to CEM, or extenuating conditions requiring consideration as requested by the agency
- Site-specific information (volume of contaminated soil, etc.) unknown at the time of release discovery
- Vehicle Mileage, CEM in-house supplies, per diem & vendor markup

Propose the level of effort which will accomplish this Task. If this Task can be performed in less time than summarized in the above table, the reduced level of effort must be proposed. If it is anticipated that additional time (as summarized in the table) will be required to perform this Task, justification must be provided.

**TASK A.2: WORKPLAN PREPARATION  
SITE CHARACTERIZATION STUDY (LARGE)**

**Scope of Work:** This task consists of all personnel time to prepare a workplan and NTEP to perform a site characterization study to delineate the extent of petroleum contamination at a site where soil and groundwater contaminant levels exceed regulatory action levels. This type of site characterization study consists of soil assessment utilizing boring advancement and/or push-drive technology, and the installation of groundwater monitoring wells.

SKILL LEVEL	DUTIES	TOTAL HRS
Principal	Senior review	1
Project Manager/ Senior Engineer/ Senior Geologist	Project management, regulatory liaison, workplan preparation	16
Staff Engineer/ Staff Geologist	Prepare workplan	5
Administration/ Clerical	Word processing/administrative support	2
Drafting	Drafting support	4
<b>TOTAL HOURS FOR TASK</b>		<b>28</b>

**Includes:**

- Review of previous environmental work performed
- Performing site reconnaissance visit(s) if necessary
- Workplan preparation/senior review
- NTEP preparation
- Drafting
- Administrative support
- Regulatory liaison
- Revision/addendums to workplan if lacking minimum requirements as requested by the regulating agency

**Excludes:**

- Revisions/addendum to workplan if requested by regulatory agencies due to conditions unknown to CEM, or extenuating conditions requiring consideration as requested by the agency



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- Health and Safety plan preparation
- Vehicle Mileage, CEM in-house supplies, per diem & vendor markup

Propose the level of effort which will accomplish this Task. If this Task can be performed in less time than summarized in the above table, the reduced level of effort must be proposed. If it is anticipated that additional time (as summarized in the table) will be required to perform this Task, justification must be provided.

**TASK A.3: WORKPLAN PREPARATION**  
**SMALL-SCALE ASSESSMENT OR LIMITED CORRECTIVE ACTION ACTIVITIES**

**Scope of Work:** This task consists of all personnel time to prepare a workplan and NTEP to perform a small-scale site characterization study or limited corrective action procedures. Proposed activities may include: installation of a groundwater monitoring well to evaluate if groundwater has been impacted; excavation and disposal of contaminated soils; soil and groundwater assessment associated with a release from a single heating oil or waste oil UST system, etc.

SKILL LEVEL	DUTIES	TOTAL HRS
Principal	Senior review	1
Project Manager/ Senior Engineer/ Senior Geologist	Regulatory liaison, project management, workplan preparation	6
Staff Engineer/ Staff Geologist	Workplan preparation	4
Administration - Clerical	Administrative support	1
<b>TOTAL HOURS FOR TASK</b>		<b>12</b>

**Includes:**

- Site reconnaissance visit
- Workplan preparation/senior review
- NTEP preparation
- Drafting
- Administrative support
- Regulatory agency liaison
- Travel time if site is located within metropolitan area of consultant
- Revision/addendums to workplan if lacking industry standard minimum requirements

**Excludes:**

- Travel time if site located outside metropolitan area of consultant
- Revisions/addendum to workplan if requested by regulatory by the agency
- Vehicle Mileage, CEM in-house supplies, per diem &

vendor markup (must be proposed in the NTEP)  
Propose the level of effort which will accomplish this Task. If this Task can be performed in less time than summarized in the above table, the reduced level of effort must be proposed. If it is anticipated that additional time (as summarized in the table) will be required to perform this Task, justification must be provided.

**TASK A.4: HEALTH AND SAFETY PLAN PREPARATION/  
UTILITY CLEARANCE COORDINATION**

**Scope of Work:** This task consists of all personnel time necessary to prepare a site specific health and safety plan and coordination of utility clearances.

SKILL LEVEL	DUTIES	TOTAL HRS
Project Manager/ Senior Engineer/ Senior Geologist	Project management, senior review	1
Staff Engineer/ Staff Geologist	Prepare health and safety plan, coordinate utility clearances	6
Administration/ Clerical	Word processing, administrative support	1
<b>TOTAL HOURS FOR TASK</b>		<b>8</b>

**Includes:**

- Site reconnaissance visit to demarcate area for public utility clearances
- Prepare site specific Health and Safety Plan
- Travel time if site located within metropolitan area of consultant

**Excludes:**

- Additional site visits if required by utility company
- Travel time if site is located outside the metropolitan area of consultant
- Oversight of private utility locating services
- Vehicle Mileage, CEM in-house supplies, per diem & markup

**Propose the level of effort which will accomplish this Task. If this Task can be performed in less time than summarized in the above table, the reduced level of effort must be proposed. If it is anticipated that additional time (as summarized in the table) will be required to perform this Task, justification must be provided.**

**TASK A.5: SUBSURFACE INVESTIGATION - SOIL ONLY  
SOIL BORING ADVANCEMENT**

**Scope of Work:** This task consists of all personnel time and costs to perform a subsurface investigation to determine the extent of soil contamination utilizing soil boring advancement/sampling. This task is broken down into two sub-tasks. Project management/set-up activities are tabulated and summarized on an hourly basis. Field activities are summarized on a unit cost basis dependent upon type of drilling technology utilized, drilling conditions, and total feet of boring advanced. It is assumed that field activities will be performed by **one** CEM staff person. Reimbursement for utilization of more than one CEM staff person during field activities will be dependent upon request/authorization from the implementing regulatory agency.

SKILL LEVEL	DUTIES	TOTAL HRS: FIRST OR ONLY DAY OF FIELD ACTIVITIES	TOTAL HRS: SUBSEQUENT DAYS(S) OF FIELD ACTIVITIES
Project Manager/ Senior Engineer/ Senior Geologist	Project management	2	0.5
Staff Engineer/ Staff Geologist	Solicit bids (if necessary), coordinate & prepare for field activities, coordinate waste disposal	8	2
<b>TOTAL HOURS</b>		<b>10</b>	<b>2.5</b>

Costs for CEM drilling oversight and sampling activities will be based on a unit cost dependent upon drilling technique utilized, drilling conditions and total feet drilled, as follows:

**Hollow Stem Auger Techniques:**

- Easy drilling conditions (minimal amount of cobbles, no caliche, etc.) = \$3.00/foot
- Typical drilling conditions (pebbles, cobbles, some caliche, etc.) = \$4.00/foot
- Difficult drilling conditions (considerable amount of

cobbles, thick caliche layers, etc.) = \$5.00/foot

Rotary Techniques (assumed to be utilized for drilling conditions that are not conducive to hollow stem auger techniques): \$4.00 per foot

Odex (driven casing) Techniques (assumed to be utilized for extremely difficult drilling conditions such as inordinate amounts of cobbles, boulders, etc.): \$5.00 per foot. If drilling conditions delay boring advancement substantially, NDEP will evaluate requests for additional time.

Additionally, a CEM labor charge of up to one-half hour for drill rig set-up time between borings, and up to one-half hour for every soil sample recovered from each borehole will be recommended for reimbursement (at the appropriate skill level rate).

Includes:

- Solicit bids for contractor services if it is anticipated costs will meet or exceed \$3,000.00
- Coordinate/oversee advancement of soil borings
- Collection of soil samples for analyses
- Appropriate borehole abandonment
- Time to deliver samples to laboratory or prepare shipping package
- Project management
- Regulatory liaison
- Travel time if site is located within metropolitan area of consultant
- Coordinate disposal of soil cuttings

Excludes:

- Obtaining encroachment permits or site access permits (if necessary)
- Workplan preparation
- Health and Safety Plan preparation/coordination of utility clearances
- CEM in-house field equipment fees
- Final report preparation
- Groundwater monitoring well construction/sampling
- Travel time if site is located outside metropolitan area of consultant
- Investigation/delineation of contamination in groundwater

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- Time for drill rig repairs and/or weather delays (not reimbursable)
- Vehicle Mileage, CEM in-house supplies, per diem & vendor markup

Assumes:

- One CEM staff person on site during field activities

Propose the level of effort which will accomplish this Task. If this Task can be performed in less time than summarized in the above table, the reduced level of effort must be proposed. If it is anticipated that additional time (as summarized in the table) will be required to perform this Task, justification must be provided.

**TASK A.6: GROUNDWATER MONITORING/RECOVERY WELL CONSTRUCTION**

**Scope of Work:** This task consists of all personnel time to coordinate and supervise the construction of groundwater monitoring/recovery wells, recover soil samples from the boreholes, and coordinate waste disposal. This task is broken down into two sub-tasks. Project management/set-up activities are tabulated and summarized on an hourly basis. Field activities are summarized on a unit cost basis dependent upon type of drilling technology utilized, drilling conditions, and total feet of boring advanced to facilitate well construction/installation. It is assumed that field activities will be performed by **one** CEM staff person. Reimbursement for utilization of more than one CEM staff person during field activities will be dependent upon request/authorization from the implementing regulatory agency.

SKILL LEVEL	DUTIES	TOTAL HRS: FIRST OR ONLY DAY OF FIELD ACTIVITIES	TOTAL HRS: SUBSEQUENT DAY(S) OF FIELD ACTIVITIES
Project Manager/ Senior Engineer/ Senior Geologist	Project management	2	0.5
Staff Engineer/ Staff Geologist	Solicit bids (if necessary), prepare & submit well waiver request, coordinate and prepare for field activities	9	2
	<b>TOTAL HOURS</b>	<b>11</b>	<b>2.5</b>

Costs for CEM drilling/well installation oversight and borehole sampling activities will be based on a unit cost dependent upon drilling technique utilized and total feet drilled, as follows:

**Hollow Stem Auger Techniques:**

- Easy drilling conditions (minimal amount of cobbles, no caliche, etc.) = \$5.00/foot
- Typical drilling conditions (cobbles, some caliche, etc.) = \$7.10/foot



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- Difficult drilling conditions (considerable amount of cobbles, thick caliche layers, etc.) = \$9.15/foot

Rotary techniques (assumed to be utilized for drilling conditions that are not conducive to hollow stem auger techniques): \$7.10/foot

Odex (driven casing) techniques (assumed to be utilized for extremely difficult drilling conditions such as inordinate amounts of cobbles, boulders, etc.): \$9.15/foot. If drilling conditions delay boring advancement substantially, the NDEP will evaluate requests for additional time.

Additionally, a CEM labor charge of up to one-half hour for drill rig set-up time between borings, and up to one-half hour for every soil sample recovered from each borehole will be recommended for reimbursement (at the appropriate skill level rate).

Includes:

- Solicit and evaluate bids if it anticipated costs will meet or exceed \$3,000.00
- Prepare & submit well waiver request
- Oversee advancement of soil boring(s) to be converted to well(s)
- Coordinate/oversee construction of well(s) - including wellheads
- Collect soil samples from borehole(s)
- CEM equipment decontamination
- Time to deliver samples to laboratory or prepare for shipping
- Project management
- Regulatory liaison
- Travel time if site is located within metropolitan area of consultant
- Coordinate disposal of soil cuttings

Excludes:

- Workplan preparation
- Health and Safety Plan preparation/coordination of utility clearances
- Data analysis/report preparation
- Travel time if site is located outside metropolitan area of consultant
- Time accrued for drill rig repairs and/or weather

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delays (not reimbursable)

- Vehicle Mileage, CEM in-house supplies, per diem & vendor markup

Assumes:

- Well casings are 2", 4" or 6" diameter

Propose the level of effort which will accomplish this Task. If this Task can be performed in less time than summarized in the above table, the reduced level of effort must be proposed. If it is anticipated that additional time (as summarized in the table) will be required to perform this Task, justification must be provided.

**TASK A.7: GROUNDWATER MONITORING/RECOVERY WELL DEVELOPMENT**

**Scope of Work:** This task consists of all personnel time to develop groundwater monitoring/recovery wells. This assumes that well development will be performed by the CEM as opposed to the driller or other outside contractor.

SKILL LEVEL	DUTIES	TOTAL HRS: FIRST OR ONLY WELL	TOTAL HRS: EACH SUBSEQUENT WELL
Technician/ Staff Engineer/ Staff Geologist	Prepare equipment, develop well(s)	3	2

**Includes:**

- Develop well(s)
- Coordinate disposal of development water

**Excludes:**

- Travel time if site is located outside metropolitan area of consultant
- Vehicle Mileage, CEM in-house supplies, per diem & vendor markup

**Note:** For groundwater monitoring well sampling activities, refer to Task G.4.

**Propose the level of effort which will accomplish this Task. If this Task can be performed in less time than summarized in the above table, the reduced level of effort must be proposed. If it is anticipated that additional time (as summarized in the table) will be required to perform this Task, justification must be provided.**

**TASK A.8: SUBSURFACE INVESTIGATION  
PUSH/DRIVE TECHNOLOGY**

**Scope of Work:** This task consists of all personnel time and costs to perform a subsurface investigation to determine the extent of soil contamination, and if appropriate, groundwater contamination, utilizing push/drive (Geoprobe™, Hydropunch™, etc.) technology. This task is broken down into two sub-tasks. Project management/set-up activities are tabulated and summarized on an hourly basis. Field activities are summarized on a unit cost basis dependent upon total feet of push-boring advancement. Costs for unsuccessful boring advancement due to probe refusal may be claimed if the investigation is successful. A successful investigation is one that results in meeting all the goals required by the regulatory case officer for this activity. It is assumed that field activities will be performed by **one** CEM staff person. Reimbursement for utilization of more than one CEM staff person during field activities will be dependent upon request/authorization from the implementing regulatory agency. The Fund recognizes that push/drive technology may not be appropriate for certain subsurface conditions. **The Fund trusts the CEM to make recommendations of appropriate technologies based upon known site conditions. Costs associated with an unsuccessful push/drive investigation will not be recommended for reimbursement.**

SKILL LEVEL	DUTIES	TOTAL HRS: FIRST OR ONLY DAY OF FIELD ACTIVITIES	TOTAL HRS: SUBSEQUENT DAYS(S) OF FIELD ACTIVITIES
Project Manager/ Senior Engineer/ Senior Geologist	Project management	2	0.5
Staff Engineer/ Staff Geologist	Solicit bids (if necessary), coordinate & prepare for field activities,	6	2
<b>TOTAL HOURS</b>		<b>8</b>	<b>2.5</b>

**Costs for CEM push/drive-boring advancement oversight and sampling activities will be based on a unit cost of \$3.00/foot.**

Additionally, a CEM labor charge of up to one-half hour for each soil or groundwater sample recovered, and for each set-up between push-drive location may be proposed (at the appropriate skill level rate).

Includes:

- Solicit bids for contractor services if it is anticipated costs will meet or exceed \$3,000.00
- Coordinate/oversee push-boring advancement
- Collection of soil and groundwater (if encountered) samples for analyses
- Time to deliver samples to laboratory or prepare shipping package
- Project management
- Regulatory liaison
- Travel time if site is located within metropolitan area of consultant

Excludes:

- Obtaining encroachment permits or site access permits (if necessary)
- Workplan preparation
- Health and Safety Plan preparation/coordination of utility clearances
- Final report preparation
- Travel time if site is located outside metropolitan area of consultant
- Vehicle Mileage, CEM in-house supplies, per diem & vendor markup

Assumes:

- One CEM staff person on site during field activities

Propose the level of effort which will accomplish this Task. If this Task can be performed in less time than summarized in the above table, the reduced level of effort must be proposed. If it is anticipated that additional time (as summarized in the table) will be required to perform this Task, justification must be provided.

**TASK A.9: SUBSURFACE INVESTIGATION  
TEST PITS**

**Scope of Work:** This task consists of all personnel time and costs to perform a subsurface investigation to determine the extent of soil contamination utilizing test pit advancement. It is assumed that test pit maximum depth will not exceed 12 feet below site grade. It is assumed that field activities will be performed by **one** CEM staff person. Reimbursement for utilization of more than one CEM staff person during field activities will be dependent upon request/authorization from the implementing regulatory agency.

SKILL LEVEL	DUTIES	TOTAL HRS: FIRST OR ONLY DAY OF FIELD ACTIVITIES	TOTAL HRS: SUBSEQUENT DAY(S) OF FIELD ACTIVITIES
Project Manager/ Senior Engineer/ Senior Geologist	Project management	1	0.5
Staff Engineer/ Staff Geologist	Solicit bids (if necessary), coordinate and prepare for field activities, coordinate waste disposal	6	--
	<b>TOTAL HOURS</b>	<b>7</b>	<b>0.5</b>
Technician or Staff Geologist	Prepare field equipment, recover samples from pit(s), decontaminate equipment, deliver/ship samples for analyses	2 hours for each test pit	

**Includes:**

- Solicit bids for contractor services if it is anticipated costs will meet or exceed \$3,000.00
- Coordinate/oversee advancement of test pits
- Collection of soil samples for analyses

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- Time to deliver samples to laboratory or prepare shipping package
- Project management
- Regulatory liaison
- Travel time if site is located within metropolitan area of consultant
- Coordinate disposal of soil cuttings

Excludes:

- Obtaining encroachment permits or site access permits (if necessary)
- Workplan preparation
- Health and Safety Plan preparation/coordination of utility clearances
- Final report preparation
- Travel time if site is located outside metropolitan area of consultant
- Investigation/delineation of contamination in groundwater
- Vehicle Mileage, CEM in-house supplies, per diem & vendor markup

Assumes:

- One CEM staff person on site during field activities

**Propose the level of effort which will accomplish this Task. If this Task can be performed in less time than summarized in the above table, the reduced level of effort must be proposed. If it is anticipated that additional time (as summarized in the table) will be required to perform this Task, justification must be provided.**

**TASK A.10: SITE CHARACTERIZATION REPORT PREPARATION  
SMALL-SCALE INVESTIGATION**

**Scope of Work:** This task consists of all personnel time to prepare/write a site characterization report for a site investigation where less than five groundwater monitoring wells were installed.

SKILL LEVEL	DUTIES	TOTAL HRS
Principal	Final review	1
Senior Engineer/ Senior Geologist/ Project Manager	Data evaluation, report preparation, senior review, regulatory liaison	6
Staff Engineer/ Staff Geologist	Data evaluation, report preparation	12
Administration/ Clerical	Word processing, administrative support	2
Drafting	Drafting support	6
<b>TOTAL HOURS FOR TASK</b>		<b>27</b>

**Includes:**

- Data evaluation
- Delineation of contaminant plume
- Recommendations for additional site characterization activities
- Preliminary recommendations for remediation of soil
- Drafting (soil boring logs, etc.)/site plan preparation
- Administrative support
- Coordination/liaison with regulatory agencies
- Senior review
- Revision/addendums to report if lacking minimum requirements as requested by the regulating agency
- Request for site closure if appropriate

**Excludes:**

- Preparation of detailed corrective action plan
- Revisions/addendum to report if requested by regulatory agencies due to conditions unknown to the CEM, or extenuating conditions requiring consideration as requested by the agency



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- Vehicle Mileage, CEM in-house supplies, per diem & vendor markup

Assumes:

- One to three lithologic units
- No co-mingling of plumes of same product type
- No sensitive receptors have been impacted

Propose the level of effort which will accomplish this Task. If this Task can be performed in less time than summarized in the above table, the reduced level of effort must be proposed. If it is anticipated that additional time (as summarized in the table) will be required to perform this Task, justification must be provided.

**TASK A.11: SITE CHARACTERIZATION REPORT PREPARATION  
LARGE-SCALE INVESTIGATION**

**Scope of Work:** This task consists of all personnel time to prepare/write a site characterization report for a site where five or more groundwater monitoring wells were installed.

SKILL LEVEL	DUTIES	TOTAL HRS
Principal	Senior review	2
Project Manager/ Senior Engineer/ Senior Geologist	Report preparation, senior review, regulatory liaison	10
Staff Engineer/ Staff Geologist	Data evaluation, report preparation	16
Administration/ Clerical	Word processing, administrative support	3
Drafting	Drafting support	8
<b>TOTAL HOURS FOR TASK</b>		<b>39</b>

## Includes:

- Data evaluation
- Contaminant plume delineation
- Potentiometric map(s) preparation
- Isocontour map(s) preparation
- Recommendations for additional site characterization activities
- Preliminary recommendations for remediation of soil and groundwater
- Drafting (soil boring logs, etc.)/site plan preparation
- Administrative support
- Coordination/liaison with regulatory agencies
- Senior review
- Revision/addendums to report if lacking minimum requirements as requested by the regulating agency
- Request for site closure if appropriate

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Excludes:

- Revisions/addendum to report if requested by regulatory agencies due to conditions unknown to the CEM, or extenuating conditions requiring consideration as requested by the agency
- Preparation of detailed corrective action plan
- Vehicle Mileage, CEM in-house supplies, per diem & vendor markup

Assumes:

- One to three general lithologic units
- Single aquifer system

Propose the level of effort which will accomplish this Task. If this Task can be performed in less time than summarized in the above table, the reduced level of effort must be proposed. If it is anticipated that additional time (as summarized in the table) will be required to perform this Task, justification must be provided.

## **B. PILOT TESTING**

**TASK B.1: AQUIFER SLUG TEST**

**Scope of Work:** This task consists of all personnel time to perform a **six hour** aquifer slug test to determine hydraulic characteristics. Proposed Staff-level time should be adjusted (if necessary) to reflect a slug test with a duration other than 6 hours.

SKILL LEVEL	DUTIES	TOTAL HRS FOR ONE WELL	TOTAL HRS FOR EACH ADDITIONAL WELL
Principal	Data review	1	-
Project Manager/ Senior Engineer/ Senior Geologist	Project management, data analyses	4	-
Staff Engineer/ Staff Geologist	Perform test, data analyses	16	4
<b>TOTAL HOURS</b>		<b>21 for one well</b>	<b>4 for each additional well</b>

**Includes:**

- Project set-up/perform slug test
- Record/plot data
- Data evaluation
- Project management
- Travel time if site is located within metropolitan area of consultant
- Coordination/liaison with regulatory agencies

**Excludes:**

- Corrective action plan preparation
- Computer modeling (if required)
- Report preparation (results generally submitted with CAP)
- Travel time if site is located outside the metropolitan area of consultant
- Vehicle Mileage, CEM in-house supplies, per diem & markup

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Assumes:

- Test well is already constructed
- 6 hour slug test
- Single aquifer system

Propose the level of effort which will accomplish this Task. If this Task can be performed in less time than summarized in the above table, the reduced level of effort must be proposed. If it is anticipated that additional time (as summarized in the table) will be required to perform this Task, justification must be provided.

### TASK B.2: AQUIFER PUMPING TEST

**Scope of Work:** This task consists of all personnel time to perform a **12 hour** continuous aquifer pumping test. Proposed Technician and/or Staff-level time should be adjusted (if necessary) to reflect a pumping test with a duration other than 12 hours.

SKILL LEVEL	DUTIES	TOTAL HRS
Principle	Data review	1
Project Manager/ Senior Engineer/ Senior Geologist	Project management, data analysis	8
Technician/ Staff Engineer/ Staff Geologist	Project set-up, perform pumping test & data analysis, coordinate water disposal	30
<b>TOTAL HOURS FOR TASK</b>		<b>39</b>

**Includes:**

- Project set-up
- Perform aquifer test
- Plot/evaluate data for inclusion in CAP
- Project management
- Travel time if site is located within metropolitan area of consultant
- Coordination/liaison with regulatory agencies
- Coordination of water disposal

**Excludes:**

- Obtaining permits to perform test
- Corrective action plan preparation
- Computer modeling, if required (i.e. contaminant transport)
- Report preparation (results generally submitted in CAP)
- Travel time if site is located outside the metropolitan area of consultant
- Vehicle Mileage, CEM in-house supplies, per diem & vendor markup

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Assumes:

- Test wells and observation wells have been previously constructed
- 12 hour continuous pump test
- One test per site sufficient to determine hydraulic properties
- Single aquifer system
- Assumes 2-4 hour recovery time. Longer recovery times may be justified using results of step drawdown test.

Propose the level of effort which will accomplish this Task. If this Task can be performed in less time than summarized in the above table, the reduced level of effort must be proposed. If it is anticipated that additional time (as summarized in the table) will be required to perform this Task, justification must be provided.



**TASK B.3: PILOT SOIL VAPOR EXTRACTION TEST**

**Scope of Work:** This task consists of all personnel time to perform an **eight hour** pilot soil vapor extraction test. Proposed Staff and Technician-level time should be adjusted (if necessary) to reflect a pilot test duration other than eight hours.

SKILL LEVEL	DUTIES	TOTAL HRS
Principal	Data analyses	1
Project Manager/ Senior Engineer/ Senior Geologist	Project management	2
Staff Engineer/ Staff Geologist	Perform test, data analyses	12
Technician	Project set-up, assist with pilot test, vapor sample collection	16
<b>TOTAL HOURS FOR TASK</b>		<b>31</b>

**Includes:**

- Data evaluation for inclusion in CAP
- Project management
- Travel time if site is located within metropolitan area of consultant
- Coordination/liaison with regulatory agencies

**Excludes:**

- Obtaining permits to perform test
- Corrective action plan preparation
- Computer modeling (if required)
- Report preparation (results generally submitted in the CAP)
- Travel time if site is located outside the metropolitan area of consultant
- Vehicle Mileage, CEM in-house supplies, per diem & vendor markup

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Assumes:

- Test wells and observation wells have been previously constructed
- 8 hour test

Propose the level of effort which will accomplish this Task. If this Task can be performed in less time than summarized in the above table, the reduced level of effort must be proposed. If it is anticipated that additional time (as summarized in the table) will be required to perform this Task, justification must be provided.

**TASK B.4: PILOT SOIL VAPOR EXTRACTION/AIR SPARGE TEST**

**Scope of Work:** This task consists of all personnel time to perform an **eight hour** pilot soil vapor extraction and a **six hour** air sparge test. Proposed Staff and Technician-level time should be adjusted (if necessary) to reflect a pilot test with a duration of other than referenced combined fourteen hours.

SKILL LEVEL	DUTIES	TOTAL HRS
Principal	Data analyses	1
Project Manager/ Senior Engineer/ Senior Geologist	Project management	2
Staff Engineer/ Staff Geologist	Perform test, data analyses,	24
Technician	Assist with pilot test	24
<b>TOTAL HOURS FOR TASK</b>		<b>51</b>

**Includes:**

- Data evaluation for inclusion in CAP
- Project management
- Travel time if site is located within metropolitan area of consultant
- Coordination/liaison with regulatory agencies

**Excludes:**

- Obtaining permits to perform test
- Corrective action plan preparation
- Computer modeling (if required)
- Report preparation (results generally submitted in the CAP)
- Travel time if site is located outside the metropolitan area of consultant
- Vehicle Mileage, CEM in-house supplies, per diem & vendor markup

**Assumes:**

- Test wells and observation wells have been previously constructed
- 8 hour vacuum test

- 6 hour sparge test

Propose the level of effort which will accomplish this Task. If this Task can be performed in less time than summarized in the above table, the reduced level of effort must be proposed. If it is anticipated that additional time (as summarized in the table) will be required to perform this Task, justification must be provided.

**TASK B.5: INFILTRATION TEST**

**Scope of Work:** This task consists of all personnel time to perform a **six hour** infiltration test to determine aquifer characteristics for the re-injection of treated groundwater, injection of hydrogen peroxide, etc. Proposed Technician and/or Staff-level time should be adjusted (if necessary) to reflect a test with a duration other than six hours.

SKILL LEVEL	DUTIES	TOTAL HOURS
Principal	Data Review	1
Project Manager/ Senior Engineer/ Senior Geologist	Project management, data analyses	4
Staff Engineer/ Staff Geologist	Perform test, data analyses	16
TOTAL HOURS		21

**Includes:**

- Project set-up/perform infiltration test
- Hydrogen peroxide dilution & mixing
- Data evaluation
- Project management
- Travel time if site is located within metropolitan area of the consultant
- Coordination/liaison with regulatory agencies

**Excludes:**

- Corrective action plan preparation
- Computer modeling (if required)
- Report preparation (results generally submitted in CAP)
- Vehicle Mileage, CEM in-house supplies, per diem & vendor markup

**Assumes:**

- Test well is already constructed
- Six hour infiltration test

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Propose the level of effort which will accomplish this Task. If this Task can be performed in less time than summarized in the above table, the reduced level of effort must be proposed. If it is anticipated that additional time (as summarized in the table) will be required to perform this Task, justification must be provided.

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State of Nevada Petroleum Fund  
CEM Cost Guidelines

### **C. CORRECTIVE ACTION PLAN (CAP) PREPARATION**

**TASK C.1: CORRECTIVE ACTION PLAN PREPARATION  
LARGE-SCALE REMEDIATION SITE**

**Scope of Work:** This task consists of all personnel time to prepare a comprehensive corrective action plan (CAP) for the remediation of petroleum product contaminated soil and/or groundwater in cases where the installation of an active (i.e. non-passive) in-situ treatment system is proposed. The NDEP Petroleum Fund requires confirmation that at least three remedial options (in the form of correspondence from the implementing regulatory agency) have been evaluated in terms of technical and cost considerations prior to approval of the CAP.

SKILL LEVEL	DUTIES	TOTAL HRS
Principal	Senior review, regulatory liaison	4
Project Manager/ Senior Engineer/ Senior Geologist	Prepare corrective action plan, regulatory liaison, project management	18
Staff Engineer/ Staff Geologist	Prepare corrective action plan	20
Administration/ Clerical	Word processing, administrative support	4
Drafting	Prepare figures/schematics	6
<b>TOTAL HOURS FOR TASK</b>		<b>52</b>

**Includes:**

- Discussion of pilot test data (if testing performed)
- Evaluation of at least three remedial alternatives with detailed costs
- Provide rationale for selection of proposed remedial action
- Preliminary (non-engineered) design of remediation system
- Drafting
- Administrative support
- Coordination with regulatory agencies
- Discussion of required permits for operation of in-situ remediation system
- Revision/addendums to CAP if lacking minimum



requirements as requested by the regulating agency

Excludes:

- Revisions/addendum to CAP if requested by regulatory agencies due to conditions unknown to the CEM, or extenuating conditions requiring consideration as requested by the agency
- Preparation of detailed construction drawings and specifications
- Soliciting and evaluating contractor bids
- Vehicle Mileage, CEM in-house supplies, per diem & vendor markup

Assumes:

- One to three general lithologic units
- Single aquifer system

Propose the level of effort which will accomplish this Task. If this Task can be performed in less time than summarized in the above table, the reduced level of effort must be proposed. If it is anticipated that additional time (as summarized in the table) will be required to perform this Task, justification must be provided.

**TASK C.2: CORRECTIVE ACTION PLAN PREPARATION  
SMALL-SCALE REMEDIATION SITE**

**Scope of Work:** This task consists of all personnel time to prepare a comprehensive corrective action plan (CAP) for the remediation of petroleum product contaminated soil and/or groundwater for sites which do not require the installation of an active in-situ treatment system. Examples include remediation utilizing well over-purging, hydrogen peroxide or ORC deployment, passive soil venting, etc. The NDEP Petroleum Fund requires confirmation that at least three remedial options (in the form of correspondence from the implementing regulatory agency) have been evaluated in terms of technical and cost considerations prior to approval of the CAP.

SKILL LEVEL	DUTIES	TOTAL HRS
Principal	Senior review, regulatory liaison	2
Project Manager/ Senior Engineer/ Senior Geologist	Prepare CAP, project management, regulatory liaison	11
Staff Engineer/ Staff Geologist	Prepare CAP	15
Administration/ Clerical	Word processing, administrative support	3
Drafting	Prepare figures & schematics	4
<b>TOTAL HOURS FOR TASK</b>		<b>35</b>

**Includes:**

- Discussion of pilot test data (if testing performed)
- Evaluation of at least three remedial alternatives with detailed costs
- Provide rationale for selection of proposed remedial action
- Preliminary (non-engineered) design of remediation system
- Drafting
- Administrative support
- Coordination with regulatory agencies
- Discussion of required permits for operation of in-situ remediation system

- Revision/addendums to CAP if lacking minimum requirements as requested by the regulatory agency

Excludes:

- Revisions/addendum to CAP if requested by regulatory agencies due to conditions unknown to the CEM, or extenuating conditions requiring consideration as requested by the agency.
- Soliciting and evaluating contractor bids
- Vehicle Mileage, CEM in-house supplies, per diem & vendor markup

Assumes:

- One to three general lithologic units
- Single aquifer system

Propose the level of effort which will accomplish this Task. If this Task can be performed in less time than summarized in the above table, the reduced level of effort must be proposed. If it is anticipated that additional time (as summarized in the table) will be required to perform this Task, justification must be provided.

#### D. CORRECTIVE ACTION PLAN IMPLEMENTATION

Note: For **system design** tasks summarized in this section, all NTEPs must include verification that the implementing regulating agency has concurred with the CAP based on a review of the technical considerations and cost effectiveness of at least three remedial options.

NDEP understands that no two treatment systems are identical due to site specific conditions. The level of appropriate effort for system design also varies dependent upon the individual CEM. The following cost tables associated with system design tasks, therefore, are presented as general guidelines only. If it is anticipated that the level of system design effort will exceed the hours/costs summarized in the following tables, the higher level of effort should be proposed and accompanied by complete justification. Conversely, if the level of system design effort is less than that summarized in the following tables, NDEP requires that the reduced level of effort be proposed.

It is the CEM's responsibility to track system design time and charges appropriately. **Appropriate hourly tracking back up must be submitted with each claim for system design tasks.**

**TASK D.1: SINGLE-SYSTEM TECHNOLOGY DESIGN**

**Scope of Work:** This task consists of all personnel time to design a treatment system consisting of a single remediation technology (groundwater pump and treat; free product recovery; soil vapor extraction; bioventing (with air injection only, etc.) This task does not include system design of a passive treatment system.

SKILL LEVEL	DUTIES	TOTAL HRS
Principal	Senior review, regulatory liaison	4
Project Manager Senior Engineer/ Senior Geologist	Project management, system design, supervise preparation of construction drawings and specifications, regulatory liaison	10
Staff Engineer/ Staff Geologist	System design	8
Administration/ Clerical	Word processing, administrative support	2
Drafting	Drafting	16
<b>TOTAL HOURS FOR TASK</b>		<b>40</b>

**Includes:**

- Data evaluation
- Final design of system
- Preparation of detailed construction drawings and specifications
- Drafting
- Administrative support
- Soliciting and evaluating bids for equipment/construction of system
- Coordination/liaison with regulatory agencies
- Senior review

**Excludes:**

- Performing pilot tests
- Corrective action plan preparation
- Coordination/oversight of system installation

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- Obtaining permits to operate system
- Design of a passive treatment system
- Vehicle Mileage, CEM in-house supplies, per diem & vendor markup

Assumes:

- Single aquifer system
- One to three groundwater recovery wells (groundwater treatment system)
- No more than eight soil vapor extraction wells
- System does not extend offsite

Propose the level of effort which will accomplish this Task. If this Task can be performed in less time than summarized in the above table, the reduced level of effort must be proposed. If it is anticipated that additional time (as summarized in the table) will be required to perform this Task, justification must be provided.

**TASK D.2: SYSTEM DESIGN**  
**SOIL VAPOR EXTRACTION/AIR SPARGE or BIOVENTING**

**Scope of Work:** This task consists of all personnel time to design an in-situ soil vapor extraction system to be operated in conjunction with an air sparge system. This table may also be utilized for the design of an in-situ bioventing system with both air injection and air withdrawal.

SKILL LEVEL	DUTIES	TOTAL HRS
Principal	Senior review, regulatory liaison	4
Project Manager/ Senior Engineer/ Senior Geologist	Project management, system design, supervise preparation of construction drawings and specifications, regulatory liaison	12
Staff Engineer/ Staff Geologist	System design	8
Administration/ Clerical	Word processing, administrative support	4
Drafting	Drafting	16
<b>TOTAL HOURS FOR TASK</b>		<b>44</b>

**Includes:**

- Data evaluation
- Final design of system
- Preparation of detailed construction drawings and specifications
- Drafting
- Administrative support
- Soliciting and evaluating bids for equipment/construction of system
- Design of system to treat extracted vapors
- Coordination/liaison with regulatory agencies
- Senior review

**Excludes:**

- Performing pilot tests

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- Corrective action plan preparation
- Coordination/oversight of system installation
- Obtaining permits to operate system
- Vehicle Mileage, CEM in-house supplies, per diem & vendor markup

Assumes:

- One to three general lithologic units
- Single aquifer system
- No more than eight soil vapor extraction wells
- No more than eight air sparge points
- System does not extend offsite

Propose the level of effort which will accomplish this Task. If this Task can be performed in less time than summarized in the above table, the reduced level of effort must be proposed. If it is anticipated that additional time (as summarized in the table) will be required to perform this Task, justification must be provided.



**TASK D.3: MULTIPLE-SYSTEM TECHNOLOGY DESIGN**

**Scope of Work:** This task consists of all personnel time to design an in-situ treatment system consisting of two or more remediation technologies, **all to be operated in conjunction at one site.** This task does not include design of a soil vapor extraction/air sparge system (refer to Task D.2).

SKILL LEVEL	DUTIES	TOTAL HRS
Principal	Senior review	4
Project Manager/ Senior Engineer/ Senior Geologist	Project management, supervise preparation of construction drawings and specifications, regulatory liaison	16
Staff Engineer/ Staff Geologist	System design	8
Administration/ Clerical	Word processing, administrative support	6
Drafting	Drafting	20
<b>TOTAL HOURS FOR TASK</b>		<b>54</b>

**Includes:**

- Data evaluation
- Final design of system
- Preparation of detailed construction drawings and specs
- Drafting
- Administrative support
- Soliciting and evaluating bids for equipment/construction of system
- Design of system to treat extracted vapors
- Coordination/liaison with regulatory agencies
- Senior review

**Excludes:**

- Performing pilot tests
- Corrective action plan preparation
- Coordination/oversight of system installation
- Obtaining permits to operate system
- Design of a soil vapor extraction/air sparge system

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- Vehicle Mileage, CEM in-house supplies, per diem & vendor markup

Assumes:

- One to three general lithologic units
- Single aquifer system
- System does not extend offsite

Propose the level of effort which will accomplish this Task. If this Task can be performed in less time than summarized in the above table, the reduced level of effort must be proposed. If it is anticipated that additional time (as summarized in the table) will be required to perform this Task, justification must be provided.

**TASK D.4: SYSTEM DESIGN  
PASSIVE BIOREMEDIATION**

**Scope of Work:** This task consists of all personnel time to design an in-situ passive bioremediation system.

SKILL LEVEL	DUTIES	TOTAL HRS
Principal	Senior review	2
Project Manager/ Senior Engineer/ Senior Geologist	Project management, supervise preparation of construction drawings and specifications, regulatory liaison	8
Staff Engineer/ Staff Geologist	System design	8
Administration/ Clerical	Word processing, administrative support	2
Drafting	Drafting	8
<b>TOTAL HOURS FOR TASK</b>		<b>28</b>

**Includes:**

- Data evaluation
- Final design of system
- Preparation of detailed construction drawings and specifications
- Drafting
- Administrative support
- Soliciting and evaluating bids for equipment/construction of system
- Design of system to treat extracted vapors
- Coordination/liaison with regulatory agencies
- Senior review

**Excludes:**

- Performing pilot tests
- Corrective action plan preparation
- Coordination/oversight of system installation
- Obtaining permits to operate system
- Vehicle Mileage, CEM in-house supplies, per diem & vendor markup

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Assumes:

- One to three general lithologic units
- System does not extend offsite

Propose the level of effort which will accomplish this Task. If this Task can be performed in less time than summarized in the above table, the reduced level of effort must be proposed. If it is anticipated that additional time (as summarized in the table) will be required to perform this Task, justification must be provided.

**TASK D.5: OVERSEE INSTALLATION/START-UP OF IN-SITU  
REMEDICATION SYSTEM**

**Scope of Work:** The scope of work for this task consists of all personnel time to coordinate and oversee the installation and start-up of an in-situ soil and/or groundwater remediation system. **This assumes that the CEM is supervising an outside contractor who is performing system installation activities.**

SKILL LEVEL	DUTIES	TOTAL HRS
Project Manager/ Senior Engineer/ Senior Geologist	Project management, regulatory liaison, final inspection	26
Staff Engineer/ Geologist	Project coordination, onsite inspections, system start-up	20
<b>TOTAL HOURS FOR TASK</b>		<b>46</b>

**Includes:**

- Coordination with contractors/subcontractors
- Regulatory agency liaison
- Inspections/observations during construction of remediation system
- Initial start-up of remediation system

**Excludes:**

- Soliciting and evaluating bids
- Completing permit applications for operation of remediation system
- Encroachment permits and access agreements if remediation system extends offsite.
- Travel time if site is located outside the metropolitan area of the consultant
- Vehicle Mileage, CEM in-house supplies, per diem & vendor markup

**Propose the level of effort which will accomplish this Task. If this Task can be performed in less time than summarized in the above table, the reduced level of effort must be proposed. If it is anticipated that additional time (as summarized in the table) will be required to perform this Task, justification must be provided.**

#### **TASK D.6: INSTALLATION/START-UP OF IN-SITU REMEDIATION SYSTEM**

**Scope of Work:** The scope of work for this task consists of all personnel time to perform installation and start-up of an in-situ soil and/or groundwater remediation system. This assumes that system installation activities are conducted by a CEM who possesses an appropriate contractor's license. If system installation costs are to exceed \$3,000.00, choice of contractor (in this case, the CEM) must be justified using the three bid system.

Since the time necessary to perform this task will vary for each project due to site specific parameters, costs will be reimbursed on a justified time and materials basis. Proposed costs will be evaluated at the time of NTEP review. All claims for this work scope must include itemized cost breakdowns summarizing work performed by all personnel, broken down by skill level. Cost breakdowns must include time spent on actual system construction, obtaining materials and equipment, project management, etc.

**Includes:**

- Coordination with contractors/subcontractors
- Regulatory agency liaison
- Initial start-up of remediation system

**Excludes:**

- Soliciting and evaluating bids
- Completing permit applications for operation of remediation system
- Encroachment permits and access agreements if remediation system extends offsite.
- Vehicle Mileage, CEM in-house supplies, per diem & vendor markup

**TASK D.7: OVERSEE EXCAVATION OF CONTAMINATED SOILS**

**Scope of Work:** This task consists of all personnel time to coordinate and oversee the excavation and treatment of impacted soils. NDEP understands that all excavation projects vary due to site specific conditions. The following cost table, therefore, is presented as a general guideline for excavation activities that encompass one field day only. If it is anticipated that excavation activities will exceed one field day, additional hours should be proposed and justified. Conversely, if it anticipated that excavation activities will be completed in less than one field day, less hours should be proposed.

SKILL LEVEL	DUTIES	TOTAL HRS
Project Manager/ Senior Engineer/ Senior Geologist	Project management, regulatory liaison	2
Staff Engineer/ Staff Geologist	Prepare bids (if necessary), coordinate and oversee field activities and disposal of contaminated soil	12
<b>TOTAL HOURS FOR TASK</b>		<b>14</b>

## Includes:

- Soliciting/evaluating bids if it anticipated excavation, loading, hauling and/or disposal costs will meet or exceed \$3,000.00
- Coordinating field activities
- Project management
- Onsite observations
- Collection of soil samples
- Transport samples to laboratory for analyses or prepare shipping package
- Coordinate disposal/treatment of contaminated soil
- Coordination/oversight of backfill operations
- Coordination/oversight of site restoration activities
- Regulatory agency liaison
- Travel time if site is located within metropolitan area of consultant

Excludes:

- Workplan preparation
- Health and Safety Plan preparation/coordination of utility clearances
- Final report preparation
- Travel time if site is located outside the metropolitan area of consultant
- Contractor/subcontractor time and materials
- Encroachment permits and/or site access agreements if excavation extends offsite
- Vehicle Mileage, CEM in-house supplies, per diem & vendor markup

Propose the level of effort which will accomplish this Task. If this Task can be performed in less time than summarized in the above table, the reduced level of effort must be proposed. If it is anticipated that additional time (as summarized in the table) will be required to perform this Task, justification must be provided.



**TASK D.8: REPORT PREPARATION - CONTAMINATED SOIL REMOVAL**

**Scope of Work:** This task consists of all personnel time to prepare a final report for excavation of contaminated soils. This report is exclusive: if other remediation and or/assessment activities occur at the site, soil excavation & disposal activities should be discussed in a site characterization report. Request for site closure, if appropriate, should be requested in this report.

SKILL LEVEL	DUTIES	TOTAL HRS
Principal	Senior review	1
Project Manager/ Senior Engineer/ Senior Geologist	Prepare report, senior review, regulatory liaison	6
Staff Engineer/ Staff Geologist	Prepare report	8
Administration/ Clerical	Word processing, administrative support	2
Drafting	Prepare figures/schematics	4
<b>TOTAL HOURS FOR TASK</b>		<b>21</b>

**Includes:**

- Report preparation/senior review
- Drafting & Administrative Support
- Request for site closure, if appropriate
- Regulatory agency liaison

**Excludes:**

- Vehicle Mileage, CEM in-house supplies, per diem & markup

**Propose the level of effort which will accomplish this Task. If this Task can be performed in less time than summarized in the above table, the reduced level of effort must be proposed. If it is anticipated that additional time (as summarized in the table) will be required to perform this Task, justification must be provided.**

#### **E. PERMIT APPLICATIONS**

The following tasks consist of all personnel time to prepare permit applications required to perform assessment activities, and to construct & operate a soil and/or groundwater remediation systems. Tables summarize typical application preparation efforts for specific types of permits. NDEP understands that the level of effort for application preparation varies, dependant upon type of permit and implementing regulatory agency (NDEP - Carson City, Clark County Health District (CCHD), Washoe County District Health Department (WCDHD), Nevada Department of Transportation (NDOT), city agencies, etc.).

The efforts summarized for the following permit applications do not include permit fees or preparation of assessment/remediation well waiver requests.

**TASK E.1: AIR QUALITY PERMITS**

NDEP - CARSON CITY: GENERAL PERMIT 2 - 10 TONS EMISSIONS/YEAR		
SKILL LEVEL	DUTIES	TOTAL HRS
Project Manager/ Senior Engineer/ Senior Geologist	Senior review, regulatory liaison, project management	2
Staff Engineer/ Geologist	Prepare permit application	2
TOTAL HOURS FOR EACH PERMIT APPLICATION		4

Propose the level of effort which will accomplish this Task. If this Task can be performed in less time than summarized in the above table, the reduced level of effort must be proposed. If it is anticipated that additional time (as summarized in the table) will be required to perform this Task, justification must be provided.

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NDEP - CARSON CITY: GENERAL PERMIT GREATER THAN 10 TONS EMISSIONS/YEAR		
SKILL LEVEL	DUTIES	TOTAL HRS
Project Manager/ Senior Engineer/ Senior Geologist	Senior review, regulatory liaison, project management	2
Staff Engineer/ Staff Geologist	Prepare permit application	6
TOTAL HOURS FOR EACH PERMIT APPLICATION		8

CCHD - GENERAL PERMIT CONTROLLED EMISSIONS LESS THAN 2 TONS/YEAR		
SKILL LEVEL	DUTIES	TOTAL HRS
Project Manager/ Senior Engineer/ Senior Geologist	Senior review, regulatory liaison, project management	2
Staff Engineer/ Staff Geologist	Prepare permit application	2
TOTAL HOURS FOR EACH PERMIT APPLICATION		4

Propose the level of effort which will accomplish this Task. If this Task can be performed in less time than summarized in the above table, the reduced level of effort must be proposed. If it is anticipated that additional time (as summarized in the table) will be required to perform this Task, justification must be provided.

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WCDHD - GENERAL PERMIT		
SKILL LEVEL	DUTIES	TOTAL HRS
Project Manager/ Senior Engineer/ Senior Geologist	Senior review, regulatory liaison, project management	2
Staff Engineer/ Staff Geologist	Prepare permit application	2
TOTAL HOURS FOR EACH PERMIT APPLICATION		4

Propose the level of effort which will accomplish this Task. If this Task can be performed in less time than summarized in the above table, the reduced level of effort must be proposed. If it is anticipated that additional time (as summarized in the table) will be required to perform this Task, justification must be provided.

**TASK E.2: WATER DISCHARGE (NPDES) PERMITS**

**Note:** All NPDES permits in the state of Nevada are processed by NDEP, Carson City.

TEMPORARY DISCHARGE PERMIT		
SKILL LEVEL	DUTIES	TOTAL HRS
Project Manager/ Senior Engineer/ Senior Geologist	Senior review, regulatory liaison, project management	2
Staff Engineer/ Staff Geologist	Prepare permit application	4
TOTAL HOURS FOR EACH PERMIT APPLICATION		6

PERMANENT DISCHARGE PERMIT		
SKILL LEVEL	DUTIES	TOTAL HRS
Project Manager/ Senior Engineer/ Senior Geologist	Senior review, regulatory liaison, project management	4
Staff Engineer/ Staff Geologist	Prepare permit application	8
TOTAL HOURS FOR EACH PERMIT APPLICATION		12

Propose the level of effort which will accomplish this Task. If this Task can be performed in less time than summarized in the above table, the reduced level of effort must be proposed. If it is anticipated that additional time (as summarized in the table) will be required to perform this Task, justification must be provided.

**TASK E.3: PERMIT TO APPROPRIATE THE PUBLIC WATERS  
OF THE STATE OF NEVADA (APPROPRIATION'S PERMIT)**

**Note:** All Appropriation's permits in the state of Nevada are processed by the Division of Water Resources, Carson City. All Water Right Maps must be prepared by a State of Nevada Water Rights Surveyor. Additional time may be requested for CEM staff Water Rights Surveyor activities.

APPROPRIATION'S PERMIT		
SKILL LEVEL	DUTIES	TOTAL HRS
Project Manager/ Senior Engineer/ Senior Geologist	Senior review, regulatory liaison, project management	2
Staff Engineer/ Staff Geologist	Prepare permit application, coordinate map surveying	4
TOTAL HOURS FOR EACH PERMIT APPLICATION		6

Propose the level of effort which will accomplish this Task. If this Task can be performed in less time than summarized in the above table, the reduced level of effort must be proposed. If it is anticipated that additional time (as summarized in the table) will be required to perform this Task, justification must be provided.

**TASK E.4: UNDERGROUND INJECTION CONTROL (UIC) PERMITS**

**Note:** All UIC permits in the state of Nevada are processed by NDEP, Carson City.

UIC PERMIT		
SKILL LEVEL	DUTIES	TOTAL HRS
Project Manager/ Senior Engineer/ Senior Geologist	Senior review, regulatory liaison, project management	2
Staff Engineer/ Staff Geologist	Prepare permit application, perform well survey	16
Drafting	Prepare cross sections, schematics, etc.	4
Administration/ Clerical	Administrative support	2
TOTAL HOURS FOR EACH PERMIT APPLICATION		24

Propose the level of effort which will accomplish this Task. If this Task can be performed in less time than summarized in the above table, the reduced level of effort must be proposed. If it is anticipated that additional time (as summarized in the table) will be required to perform this Task, justification must be provided.



**TASK E.5: MISCELLANEOUS PERMITS**

NDEP understands that the level of effort to prepare permits not summarized above varies depending upon permit type (building, encroachment, etc.) and the requiring agency (NDOT, city, etc.). Costs for preparing these miscellaneous permits should be proposed on a Task Summary Sheet, providing full justification of all efforts.

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**F. REMEDIATION SYSTEM OPERATIONS, MONITORING & MAINTENANCE**

**TASK F.1: OPERATIONS AND MONITORING OF IN-SITU REMEDIATION SYSTEM & OVERSIGHT OF NON-CEM REMEDIATION SYSTEM MAINTENANCE CONTRACTOR**

**Scope of Work:** This task consists of all personnel time for the operation and monitoring of an in-situ soil and/or groundwater remediation system. This task assumes multiple remediation systems are not being utilized at the site, and that routine equipment maintenance is conducted by a qualified contractor who has been hired by the owner or CEM.

SKILL LEVEL	DUTIES	TOTAL HRS
Project Manager/ Senior Engineer/ Senior Geologist	Project management, regulatory liaison, manage outside maintenance contractor	1/month
Staff Engineer/ Staff Geologist	Monitor system operations, evaluate system, make adjustments to system, manage outside maintenance contractor	4/month
Technician	Monitor system operations, record operating parameters, inspect system, collect influent/effluent vapor and water samples	10/month
<b>TOTAL HOURS PER MONTH</b>		<b>15</b>

**Includes:**

- Performing site visits
- Inspect remediation system
- Monitor system operations
- Make adjustments to system to optimize performance
- Maintain onsite maintenance log for operating parameters (flowrates, pressures, vacuum, etc.)
- Determine if GAC canisters are spent (PID/OVM readings)
- Troubleshoot system to correct any problems
- Coordinate replacement of GAC canisters
- Oversight of maintenance contractor
- Collecting samples of influent/effluent vapor and recovered groundwater

**Excludes:**

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- Remediation system maintenance
- Remediation system modifications
- Emergency site visits
- Permit report preparation
- Groundwater monitoring well sampling
- Travel if located outside Metropolitan Area of consultant
- Vehicle Mileage, CEM in-house supplies, per diem & vendor markup
- Extra O&M time if multiple remediation systems are present at the site
- Time to deploy and/or change out ORC socks
- Time to deploy nutrients to enhance natural biodegradation

Assumes:

- Singular remediation system (i.e. no off-site involvement, multiple systems, etc.)
- Site located within Metropolitan Area of Consultant

Propose the level of effort which will accomplish this Task. If this Task can be performed in less time than summarized in the above table, the reduced level of effort must be proposed. If it is anticipated that additional time (as summarized in the table) will be required to perform this Task, justification must be provided.

**TASK F.2: CEM-CONDUCTED IN-SITU REMEDIATION SYSTEM  
MONTHLY MAINTENANCE**

**Scope of Work:** This task consists of all personnel time to perform monthly maintenance procedures of an in-situ soil and/or groundwater remediation system. This task assumes that the CEM is conducting all routine remediation system maintenance activities.

NDEP understands that the level of effort to complete this task will vary, depending upon remediation system and site characteristics. Costs for CEM monthly remediation system maintenance should be proposed on a Task Summary Sheet, providing full justification of all efforts.

**Includes:**

- Performing site visits
- Perform routine equipment maintenance, modifications and repair procedures in accordance with manufacturer's guidelines
- Coordinate non-routine equipment repairs with sub-contractor

**Excludes:**

- Operations and monitoring procedures
- Vehicle Mileage, CEM in-house supplies, per diem & vendor markup

**TASK F.3: REMEDIATION SYSTEM PERMIT REPORT PREPARATION**

**Scope of Work:** This task consists of all personnel time to prepare a permit report. Permit reports include reports to regulatory agencies as stipulated in the Air Quality, Underground Injection Control, NPDES, Limited Water Rights, Special Use, and/or other applicable permits.

SKILL LEVEL	DUTIES	TOTAL HRS
Principal/ Project Manager/ Senior Engineer/ Senior Geologist	Senior review, regulatory liaison, project management	1/report
Staff Engineer/ Staff Geologist	Prepare report	4/report
Administration/ Clerical	Administrative support	1/report
<b>TOTAL HOURS PER REPORT</b>		<b>6</b>

**Includes:**

- Data assimilation
- Regulatory agency liaison
- Administrative support

**Excludes:**

- Vehicle Mileage, CEM in-house supplies, per diem & vendor markup

**Propose the level of effort which will accomplish this Task. If this Task can be performed in less time than summarized in the above table, the reduced level of effort must be proposed. If it is anticipated that additional time (as summarized in the table) will be required to perform this Task, justification must be provided.**

**TASK F.4a: GROUNDWATER MONITORING WELL SAMPLING**

**Scope of Work:** This task consists of all personnel time to purge and sample one or more groundwater monitoring wells for analyses of dissolved petroleum hydrocarbon constituents.

SKILL LEVEL	DUTIES	TOTAL HRS FOR FIRST OR ONLY WELL OF PROJECT	TOTAL HRS FOR EACH ADDITIONAL WELL 50' OR LESS IN DEPTH	TOTAL HRS FOR EACH ADDITIONAL WELL GREATER THAN 50' IN DEPTH
Project Manager	Project set-up & supervision	1		-
Technician/ Staff Engineer/ Staff Geologist	Purge and sample well, deliver samples to lab for analyses, coordinate purge water disposal	4	1/Well	1.5/well
<b>TOTAL HOURS</b>		5 for first or only well of project	1 for each additional well 50' or less	1.5 for each additional well greater than 50'

**Includes:**

- Equipment preparation
- Travel time if site is located within metropolitan area of consultant
- Purge/sample groundwater monitoring well(s)
- Decontamination of sampling equipment
- Time to transport sample(s) to lab for analyses, or prepare shipment package
- Coordinate disposal of purge water

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Excludes:

- Obtaining any required permits if well(s) located offsite
- Report preparation
- Data analysis
- Regulatory agency liaison
- Travel time if site is located outside metropolitan area of consultant
- Well installation
- Vehicle Mileage, CEM in-house supplies, per diem & vendor markup

Assumes:

- 2" to 4" diameter wells
- Wells have been properly developed

Propose the level of effort which will accomplish this Task. If this Task can be performed in less time than summarized in the above table, the reduced level of effort must be proposed. If it is anticipated that additional time (as summarized in the table) will be required to perform this Task, justification must be provided.



**TASK F.4b: GROUNDWATER MONITORING**

**Scope of Work:** This task consists of all personnel time to monitor one or more groundwater monitoring wells for evaluation of groundwater parameters such as dissolved oxygen, pH, TDS, etc. This task does not include the recovery of groundwater samples for dissolved petroleum hydrocarbon constituent analyses. If groundwater monitoring is being performed in conjunction with groundwater sampling activities, project set-up, supervision and preparation activities should not be requested.

SKILL LEVEL	DUTIES	TOTAL HRS FOR FIRST OR ONLY WELL OF PROJECT	TOTAL HRS FOR EACH ADDITIONAL WELL 50' OR LESS IN DEPTH	TOTAL HRS FOR EACH ADDITIONAL WELL GREATER THAN 50' IN DEPTH
Project Manager	Project set-up & supervision	1	-	-
Technician/ Staff Engineer/ Staff Geologist	Prepare for and conduct well monitoring activities	2	20 Minutes per Well	30 Minutes per Well
<b>TOTAL HOURS</b>		3 hours for first or only well of project	20 minutes for each additional well 50' or less	30 minutes for each additional well greater than 50'

**Includes:**

- Equipment preparation
- Travel time if site is located within metropolitan area of consultant

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Excludes:

- Project set-up, management and preparation activities if performed in conjunction with groundwater sampling (Task F.4a)
- Obtaining any required permits for offsite well(s)
- Report preparation
- Data evaluation
- Regulatory agency liaison
- Travel time if site is located outside metropolitan area of the consultant
- Well installation
- Vehicle Mileage, CEM in-house supplies, per diem & vendor markup

Assumes:

- 2" to 4" diameter wells
- Wells have been properly developed

Propose the level of effort which will accomplish this Task. If this Task can be performed in less time than summarized in the above table, the reduced level of effort must be proposed. If it is anticipated that additional time (as summarized in the table) will be required to perform this Task, justification must be provided.

**TASK F.5: REMEDIATION STATUS, GROUNDWATER SAMPLING  
AND/OR QUARTERLY REPORT PREPARATION**

**Scope of Work:** This task consists of all personnel time to prepare remediation status reports summarizing remediation system status and groundwater and/or vapor sample results as requested by the regulating agency. This report is also to be used to request site closure pursuant to completion of post-remediation monitoring.

SKILL LEVEL	DUTIES	TOTAL HRS
Principal	Senior review	1/report
Project Manager/ Senior Engineer/ Senior Geologist	Report preparation	4/report
Staff Engineer/ Staff Geologist	Report Preparation	4/report
Administration/ Clerical	Administrative support	1/report
Drafting	Drafting	2/report
<b>TOTAL HOURS PER REPORT</b>		<b>12</b>

**Includes:**

- Data assimilation
- Regulatory agency liaison
- Administrative support
- Request for site closure, if appropriate

**Excludes:**

- Vehicle Mileage, CEM in-house supplies, per diem & markup

**Propose the level of effort which will accomplish this Task. If this Task can be performed in less time than summarized in the above table, the reduced level of effort must be proposed. If it is anticipated that additional time (as summarized in the table) will be required to perform this Task, justification must be provided.**

**TASK F.6: HYDROGEN PEROXIDE INJECTION**

**Scope of Work:** This task consists of all personnel time to procure and deploy dilute hydrogen peroxide into the subsurface utilizing existing injection wells and/or trenches. This task is broken down into two sub-tasks. Levels of effort for project management and field preparation activities are tabulated below. NDEP understands that levels of effort for actual field activities will vary from site to site pursuant to subsurface conditions and actual injection methodology. Levels of effort for field activities, therefore, must be proposed based on the results of the first injection event (deployment of hydrogen peroxide into all injection wells and/or trenches at the site).

SKILL LEVEL	DUTIES	TOTAL HOURS
Project Manager	Project management	1 hour per injection event
Technician/ Staff Engineer/ Staff Geologist	Injection event preparation: hydrogen peroxide procurement and mixing, make ready for field activities, mobilize to site	4 hours per injection event
<b>TOTAL HOURS OF SET-UP TIME PER INJECTION EVENT</b>		<b>5</b>
Technician/ Staff Engineer/ Staff Geologist	Deployment of hydrogen peroxide into all injection wells and/or trenches at the site	Hours based on the results of the first injection event

**Includes:**

- Hydrogen peroxide procurement
- Hydrogen peroxide dilution & mixing
- Preparation for field activities
- Mobilization to the site if located within the CEM=s metropolitan area

**Excludes:**

- Vehicle Mileage, CEM in-house supplies, per diem & vendor markup

Levels of effort for actual hydrogen peroxide injection should be proposed based on the results of the first injection event. The initial NTEP proposing hydrogen peroxide injection will be submitted after the level of effort has been determined. The

initial NTEP, therefore, will summarize "after the fact" levels of effort for the initial event, and propose subsequent injection events based on determined levels of effort.

Propose the level of effort which will accomplish this Task. If this Task can be performed in less time than summarized in the above table, the reduced level of effort must be proposed. If it is anticipated that additional time (as summarized in the table) will be required to perform this Task, justification must be provided.

## **G. SITE CLOSURE ACTIVITIES**

**TASK G.1: PERMANENT WELL CLOSURE COORDINATION**

**Scope of Work:** This task consists of all personnel time to coordinate the permanent closure of groundwater monitoring/recovery, air sparge, soil vapor extraction, underground injection, and/or bioventing wells following completion of remediation and/or pre-closure monitoring activities.

This task is broken down into two sub-tasks. Project management/set-up activities are summarized on an hourly basis. Costs for CEM field activities will be evaluated on a time and materials basis (summarized following table).

SKILL LEVEL	DUTIES	TOTAL HRS
Project Manager/ Senior Engineer/ Senior Geologist	Project management, regulatory liaison	2
Staff Engineer/ Staff Geologist	Coordinate field activities, submit closure letter to Division of Water Resources, submit & evaluate bids (if necessary), coordinate sub-contractors	6
TOTAL HOURS		8

**Note:** Costs for CEM field activities will be reimbursed on a justifiable time and materials basis. Proposed costs will be evaluated at the time of NTEP review.

Includes:

- Soliciting and evaluating bids if it is anticipated that contracted costs will meet or exceed \$3,000.00
- Coordinating field activities
- Coordinating site restoration (as result of well abandonment only - if necessary)
- Onsite observations
- Coordination/liaison with regulatory agencies
- Submittal of closure letter to Division of Water Resources
- Travel time if site is located with metropolitan area of consultant

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- Coordination of waste disposal

Excludes:

- Coordinate decommissioning/removal of remediation system
- Contractor/subcontractor time and materials
- Travel time if site is not located within metropolitan area of consultant
- Vehicle Mileage, CEM in-house supplies, per diem & vendor markup

Assumes:

- Wells abandoned in accordance with Nevada Administrative Code 534.420

Propose the level of effort which will accomplish this Task. If this Task can be performed in less time than summarized in the above table, the reduced level of effort must be proposed. If it is anticipated that additional time (as summarized in the table) will be required to perform this Task, justification must be provided.



**TASK G.2: REMEDIATION SYSTEM DECOMMISSIONING/REMOVAL  
AND SITE RESTORATION COORDINATION**

**Scope of Work:** This task consists of all personnel time to coordinate the decommissioning/removal of the remediation system and all associated equipment (excluding permanent well closure), and perform site restoration activities. This task assumes that field work will be performed by a sub-contractor.

This task is broken down into two sub-tasks. Project management/set-up activities are summarized on an hourly basis. Costs for CEM field activities will be evaluated on a justified time and materials basis (summarized following table).

REMEDATION SYSTEM DECOMMISSIONING		
SKILL LEVEL	DUTIES	TOTAL HRS
Project Manager/ Senior Engineer/ Senior Geologist	Regulatory liaison, project management	2
Staff Engineer/ Staff Geologist	Prepare, submit and evaluate bid packages (if necessary), coordinate equipment and waste disposal	6
TOTAL HOURS FOR TASK		8

**Note:** Costs for CEM field activities will be reimbursed on a justified time and materials basis. Proposed costs will be evaluated at the time of NTEP review.

## Includes:

- Soliciting and evaluating bids if it anticipated that contractor costs will meet or exceed \$3,000.00
- Coordinating field activities
- Onsite activities/observations
- Coordination/liaison with regulatory agencies
- Travel time
- Coordination of waste disposal

## Excludes:

- Coordination of permanent well closure
- Vehicle Mileage, CEM in-house supplies, per diem & vendor markup

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Propose the level of effort which will accomplish this Task. If this Task can be performed in less time than summarized in the above table, the reduced level of effort must be proposed. If it is anticipated that additional time (as summarized in the table) will be required to perform this Task, justification must be provided.

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#### **H. CHANGE ORDER OR NTEP PREPARATION**

**TASK H.1: CHANGE ORDER OR NTEP PREPARATION**

**Scope of Work:** This task consists of all personnel time to prepare a Change Order summarizing/requesting additional work associated with any assessment/remediation phase, or a stand-alone NTEP that is not part of a Workplan. Typically a Change Order consists of a one to two page letter report summarizing the request, pertinent attachments (laboratory analytical results, etc.), and an NTEP. **Please see the discussion regarding Change Orders on pages 7, 8 & 13 of this document.**

SKILL LEVEL	DUTIES	TOTAL HRS
Project Manager/ Senior Engineer/ Senior Geologist	Change Order or NTEP preparation/review	1
Staff Engineer/ Staff Geologist	Change Order or NTEP preparation	2
Administration/ Clerical	Word processing/administrative support	1
<b>TOTAL HOURS FOR TASK</b>		<b>4</b>

Includes:

- Change Order preparation
- Senior review
- NTEP preparation

Propose the level of effort which will accomplish this Task. If this Task can be performed in less time than summarized in the above table, the reduced level of effort must be proposed. If it is anticipated that additional time (as summarized in the table) will be required to perform this Task, justification must be provided.

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**I. PREPARATION OF STATE PETROLEUM FUND REIMBURSEMENT PACKAGE  
OR APPLICATION FOR PETROLEUM FUND COVERAGE**

**TASK I.1: PREPARATION OF STATE PETROLEUM FUND REIMBURSEMENT  
PACKAGE OR APPLICATION FOR PETROLEUM FUND COVERAGE**

**Scope of Work:** This task consists of all personnel time for the preparation and submittal of reimbursement packages to the State of Nevada Petroleum Fund or preparation of an application for Petroleum Fund coverage. Please see page 17 of this document for information regarding minimum reimbursement package amounts.

SKILL LEVEL	DUTIES	TOTAL HRS
Principal/ Project Manager/ Senior Engineer/ Senior Geologist	Senior review	1/submittal
Staff Engineer/ Staff Geologist	Prepare reimbursement package, prepare application for Petroleum Fund coverage	3/submittal
Administration/ Clerical	Administrative/clerical support	1/submittal
<b>TOTAL HOURS PER SUBMITTAL</b>		<b>5</b>

Includes:

- Completion and submittal of all necessary forms, invoices, bids, etc.
- Regulatory liaison
- Submittal of additional information if requested by NDEP

Propose the level of effort which will accomplish this Task. If this Task can be performed in less time than summarized in the above table, the reduced level of effort must be proposed. If it is anticipated that additional time (as summarized in the table) will be required to perform this Task, justification must be provided.

**APPENDIX A**  
**CEM IN-HOUSE CHARGES**

NDEP will recommend reimbursement for the following CEM in-house materials and rental equipment, not to exceed the below summarized costs, **only**. Proposed costs for items that do not appear in the tables will be evaluated using the NDEP Minor Equipment Policy (Appendix C). A CEM usage log must accompany each claim requesting reimbursement for all in-house equipment rental and materials costs.

CEM IN-HOUSE EQUIPMENT RENTAL	
EQUIPMENT	RATE/DAY
PID - OVM	\$100
Submersible Pump (Including Decon Materials)	\$25
pH/Conductivity/Temp Meter	\$15
Dissolved Oxygen Meter	\$15
Water Level Meter	\$20
Anemometer	\$15
Oil/Water Interface Probe	\$50
Data Logger (Including Transducers)	\$125
Portable Generator	\$40
Purge Bailer	\$10
Hand Auger	\$10
Digital Camera	\$15

CEM IN-HOUSE MATERIALS	
MATERIALS	COST
Disposable Bailer (Each)	\$7.50
55-Gallon Drum (Each)	\$45
Tyvek Coveralls (Each)	\$7



**APPENDIX B**  
**TRAVEL/PER-DIEM RATES**

Meal, lodging, CEM vehicle mileage, and travel expenses will be recommended for reimbursement pursuant to allowable state rates **only**. The following tabulated amounts are pursuant to allowable state rates as of November 21, 2001. Because allowable state rates are subject to change, NDEP urges the CEM to contact this office at (775) 687-4670 or check our website at [ndep.state.nv.us](http://ndep.state.nv.us) for the latest information regarding allowable rates.

A copy of a receipt must accompany all reimbursement claims for vehicle rental. CEM voucher logs may be used as reimbursement claim backup for meals and vehicle mileage.

TRAVEL/PER-DIEM RATES	
ITEM	RATE
Weekday Lodging	\$50/Night
Weekend Lodging	\$82/Night
Breakfast	\$5.50/Meal
Lunch	\$6.50/Meal
Dinner	\$14/Meal
Mileage (Personal or Company Vehicle)	\$0.345/Mile if destination is not serviced by an airline
Car Rental:	DAILY
Economy/Compact Car	\$37
Mid-Size Car	\$38
Full-Size Car	\$44
Minivan	\$59
Truck/SUV	\$88.50

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**Lodging:** NDEP's reimbursement recommendation policy for CEM

lodging expenses is as follows:

- **Nevada-Based CEMs:** NDEP **will** recommend reimbursement for lodging associated with sites located greater than 30 miles from the CEM's office, unless the site is located in the Las Vegas or Reno-Carson City areas.
- **Out-of-State CEMs:** NDEP **will** recommend reimbursement for lodging associated with sites located greater than 30 miles from the Las Vegas or Reno-Carson City areas only.

**Meals:** NDEP's reimbursement recommendation policy for CEM meal expenses is as follows:

- **Nevada-Based CEMs:** NDEP **will** recommend reimbursement for meals associated with sites located greater than 30 miles from the CEM's office.
- **Out-of-State CEMs:** NDEP **will** recommend reimbursement for meal costs accrued in the same area in which the site is located.

**Travel:** NDEP's reimbursement recommendation policy for CEM vehicle mileage and travel costs is as follows:

**Nevada-Based CEMs**

- Vehicle mileage costs **will** be recommended for reimbursement for project-related travel, with the following exceptions/specifications:
  - If an owner/operator with a project site located within the Las Vegas or Reno-Carson City metropolitan areas elects to contract a non-local CEM, the CEM's vehicle mileage costs accrued from their out-of-town office to the project site **will not** be recommended for reimbursement.
- Vehicle mileage costs for a CEM traveling from the Reno area to the Carson City area, or vice-versa, **will** be recommended for reimbursement.

- Air travel and vehicle rental costs associated with sites located outside the metropolitan area of the CEM **will** be recommended for reimbursement.

#### **Out-of-State CEMs**

- Vehicle mileage or airline ticket costs associated with traveling to a site located in the Las Vegas or Reno-Carson City areas **will not** be recommended for reimbursement.
- Vehicle mileage costs associated with traveling to a rural Nevada site **will** be recommended for reimbursement, beginning from the closest metropolitan area to the site.
- Project-related vehicle mileage costs within the area of the site **will** be recommended for reimbursement.
- Rental vehicle costs for work performed in the Las Vegas or Reno-Carson City areas **will not** be recommended for reimbursement.
- Rental vehicle costs for work performed in rural Nevada sites **will** be recommended for reimbursement, beginning from the closest metropolitan area to the site.

**Note:** On all projects receiving reimbursement from the State of Nevada Petroleum Fund, the CEM must analyze cost efficiency regarding field work performed at remote sites. The efficiency of costs associated with per diem (lodging and meals in the project's town, or the town located closest to the project site) must be evaluated against costs which will be accrued driving to and from the site on a daily basis, and staff overtime hours. Analyses and justification of such costs must appear in the NTEP.

**APPENDIX C**  
**NDEP MINOR EQUIPMENT POLICY**

- Minor equipment is defined as reusable equipment that is not specific to the site and costs less than \$5,000.00
- NDEP will not recommend minor equipment purchases for reimbursement. NDEP will recommend for reimbursement CEM or contractor equipment rental at a set rate to be determined as follows:
  - Cost of equipment X 1.5 (to allow for overhead and maintenance) = adjusted cost
  - Adjusted cost/500 hours = hourly rate
  - Hourly rate X 8 hours = daily rate
  - Hourly rate X 35 hours = weekly rate
  - Hourly rate X 100 hours = monthly rate
- The above method of determination is only to be used for equipment owned and operated by the CEM or contractor, and does not apply to equipment rented from rental companies. Equipment utilized from rental companies will continue to be recommended for reimbursement at normal rental rates.
- EXAMPLES:
  - \$100.00 piece of equipment
  - $\$100.00 \times 1.5 = \$150.00$
  - $\$150.00 / 500 \text{ hrs} = \$0.30/\text{hr}$ ;  $\$0.30 \times 8 \text{ hrs} = \$2.40/\text{day}$
  - $\$0.30 \times 35 \text{ hrs} = \$10.50/\text{week}$ ;  $\$0.30 \times 100 \text{ hrs} = \$30.00/\text{mo}$

**APPENDIX D**  
**NTEP SUBMITTAL FORMS & INSTRUCTIONS**

### **NTEP SUBMITTAL FORM INSTRUCTIONS**

An NTEP must be submitted on the forms supplied on pages D-3 and D-4 (or a representative reproduction thereof). Each proposed task must be summarized on a separate NTEP Task Submittal Form. The NTEP Cover Sheet form must be used to summarize the total proposed NTEP amount.

#### **Petroleum Fund Cost Guidelines Task Number:**

Reference the Task Number of the appropriate proposed task (e.g. B.9, E.2, etc.). If the proposed task summarized on the form does not correlate to a Cost Guidelines task, indicate as "N/A" and provide a complete description of the proposed activities.

#### **Petroleum Fund Case ID Number:**

The case number assigned by Petroleum Fund staff pursuant to an Application for Coverage.

#### **Facility ID Number:**

The NDEP assigned facility identification number.

#### **CEM Assigned NTEP Tracking Number:**

Each claim submittal Invoice Itemization Sheet must reference a specific NTEP. The CEM may use the date of NTEP preparation or a case-specific tracking number.

#### **Task Description:**

Provide a detailed description of the proposed task. If the NTEP is attached to a Work Proposal, you may refer to the appropriate task description discussion in the proposal.

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#### **CEM Skill Level, In-House Equipment, Vehicle Mileage, Per Diem, or Outside Contractor Markup:**

List the proposed CEM skill level, type of in-house equipment, vehicle usage, per-diem, or name of outside contractor (for CEM markup) to be proposed.



Refer to Appendix A for appropriate CEM in-house equipment rates.  
If CEM in-house equipment is to be used that is not listed in Appendix B, refer to Appendix C for rental rate calculation instructions.

Refer to Appendix B for State approved per diem/vehicle mileage rates and travel policies.

**Rate:**

List the hourly rate of associated CEM skill level, the appropriate CEM in-house equipment/per diem/vehicle mileage rate, or percentage of CEM markup proposed for listed outside contractor.

**Total Units:**

List the number of proposed CEM hours for the skill level listed, the number of days of in-house equipment usage, appropriate per diem units (meals, nights of lodging, etc.), proposed miles of CEM vehicle usage, or anticipated cost of outside contractor services (not including CEM markup).

**Duties:**

Summarize the task duties for listed CEM skill level, reason for in-house equipment usage, reason for accruing per diem or vehicle mileage, or type of outside contractor service.

**Proposed Cost:**

List the proposed cost of CEM skill level, in-house equipment usage, per diem, vehicle mileage, or outside contractor CEM markup (rate x units).

**Total Task Proposed Cost:**

Total proposed cost of task.

**Justification for Task Cost Overage or Non-Usage of Cost Guidelines Task:**

Complete justification must be supplied if the proposed task hours exceed those summarized in the appropriate table in the Cost Guidelines document. Complete justification must also be supplied if the CEM is proposing a task that does not appear in the Cost Guidelines document. **If a CEM anticipates any task will be completed in less time than tabulated in this document, NDEP requires that the reduced level of effort is proposed.**

NTEP COVER SHEET

Petroleum Fund Case ID Number: \_\_\_\_\_

Facility ID Number: \_\_\_\_\_

CEM Assigned NTEP Tracking Number: \_\_\_\_\_

PETROLEUM FUND TASK NO. (Attach each appropriate NTEP Task Submittal form)	PROPOSED TASK AMOUNT
TOTAL PROPOSED NTEP AMOUNT:	

I have reviewed and understand the proposed costs summarized in this proposal. I understand that I am responsible for any proposed costs not recommended for reimbursement by the State of Nevada Petroleum fund staff, and which I have agreed with the CEM are appropriate to incur, and/or have directed to incur such costs on the subject project.

\_\_\_\_\_  
Owner/Operator (Claimant) Signature and Date

I hereby attest that the above tasks are associated with the noted Petroleum Fund Case ID No. cleanup project and that the attached NTEP Task Submittal Forms were prepared using the State of Nevada Petroleum Fund CEM Cost Guidelines.

\_\_\_\_\_  
CEM Signature and Date

NTEP TASK SUBMITTAL FORM

Petroleum Fund Cost Guidelines Task Number: \_\_\_\_\_

Petroleum Fund Case ID Number: \_\_\_\_\_ Facility ID Number: \_\_\_\_\_

CEM Assigned NTEP Tracking Number: \_\_\_\_\_

Task Description (Including Start Date & End Date):

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CEM SKILL LEVEL, IN-HOUSE EQUIP, VEHICLE MILEAGE, PER DIEM, OR OUTSIDE CONTRACTOR MARKUP	RATE	TOTAL UNITS	DUTIES	PROPOSED COST
TOTAL PROPOSED TASK AMOUNT				

Justification for Task Cost Overage or Non-Usage of Cost  
Guidelines Task:

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**APPENDIX E**  
**GUIDELINES FOR HEATING OIL AND WASTE OIL TANK RELEASES**

### **E.1: Remediation Using Initial/Emergency Abatement**

In many cases, assessment and remediation of contamination which has emanated from heating oil and waste oil underground storage tank (UST) systems may be conducted immediately following release discovery (most commonly, tank removal). Because of the thick, viscous nature of heating and waste oils, contamination very rarely migrates far from the tank or contaminates groundwater.

Immediately following release discovery, if it can be determined that a reportable quantity of soil with contaminant concentrations exceeding state action levels exists, the CEM should immediately contact the implementing regulatory agency. The CEM should request authorization to excavate contaminated soil and transport it to a treatment or disposal facility using equipment already located onsite. Soil confirmation samples can then be recovered from the excavation. Pursuant to site specific constraints and analytical results of the confirmation samples, the CEM may be able to request case closure.

In this case, because remediation was performed as "initial/emergency abatement", no NTEP is necessary. Please refer to Guidelines Section #1, "Use of Tables", #9.

## **E.2: NTEPs for Assessment and Remediation Activities**

If the regulatory case officer requests assessment and/or remediation activities occur following the scenario summarized in E.1, NTEPs must be prepared and submitted. Please refer to the following Guidelines tasks:

Workplan Preparation: Task A.3

Site Characterization Report Preparation: Task A.10

Corrective Action Plan Preparation: Task C.2

Field Activities: Please refer to the appropriate field activity Guidelines Tasks.

Under all circumstances, the anticipated level of effort should be proposed. Please refer to Guidelines Section #1, "Use of Tables". #1.

**APPENDIX F**

**CEM MARKUP: "LIKE AND KIND SERVICES"**



Resolution 96-004, Resolution to Adopt Guidelines Regarding the Eligibility for Petroleum Fund Reimbursement for Certain Items, passed by the Board on February 29, 1996 contains attachment "A" which on page number 1 states "NDEP will recommend reimbursement for.....Maximum allowed markup of 15% of the cost of subcontracted goods and services totaling less than \$3000 in the aggregate for like-and-kind."

Used in this context, the term "like-and kind" refers to goods and services usually described in a workplan submittal as a task beginning at its initial start, continuing over a period of days or in some cases, weeks, and ending when the entirety of the task has been performed.

The following remediation services are considered like-in-kind services:

Well drilling of a set of wells; excavation and/or transportation of soils and/or backfilling; equipment or system installation; equipment or system repairs to address a downtime event; laboratory analysis of samples; soil boring advancement; equipment decommissioning; site restoration; well head surveying; carbon canisters or other treatment system deliveries; etc.

(NOTE: If any of these tasks, excluding laboratory analysis, exceed \$3,000, three bids must be solicited and overhead is not reimbursable.)